



# Milford Lake Kansas

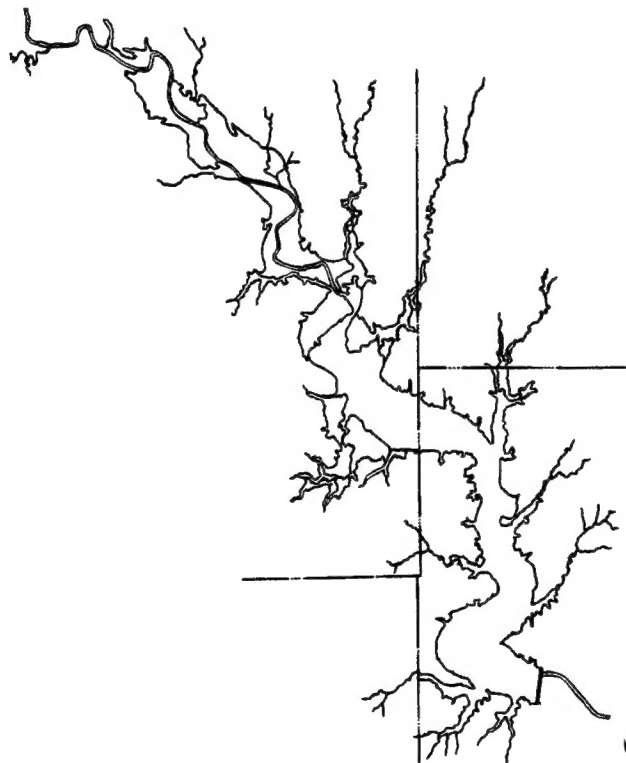
**US Army Corps  
of Engineers**  
Kansas City District

Archaeology Laboratory  
University of South Dakota

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## A 1993 Cultural Resources Inventory at Milford Lake in Geary, Clay, Dickinson and Riley Counties, Kansas

Contract DACW-93-C-0042



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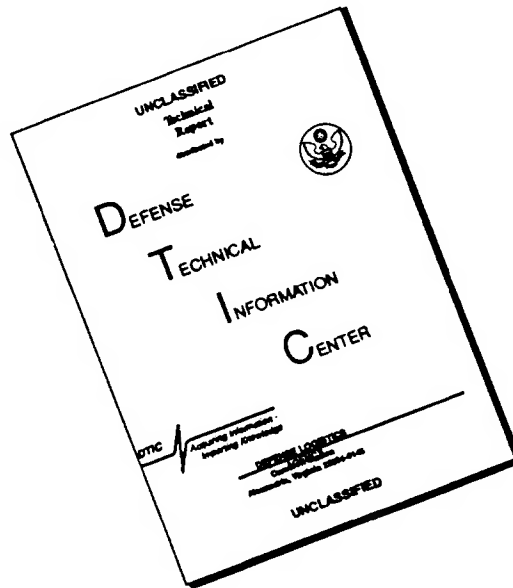
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**A 1993 CULTURAL RESOURCES INVENTORY AT MILFORD LAKE  
IN GEARY, CLAY, DICKINSON AND RILEY COUNTIES, KANSAS**

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**March 21, 1995**

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Department of the Army  
Kansas City District. Corps of Engineers  
700 Federal Building  
Kansas City, Missouri 64106-2896**

## SYNOPSIS

The University of South Dakota Archaeology Laboratory (USDAL) has conducted this cultural resources inventory and evaluation at Milford Lake in Geary, Clay, Dickinson and Riley Counties, Kansas for the U.S. Army Corps of Engineers-Kansas City District, as part of the Corps' management requirements for reservoir lands. USDAL has surveyed approximately 5,561 acres on the reservoir, lands above the shoreline that may be affected by future recreational facilities, roads and agricultural production (Figures 1 and 2).

The survey located 82 sites (71 of them new sites and 11 previously recorded). Fifty-one prehistoric and 31 historic sites were identified.

In addition to the recording, USDAL documented the sites for the Kansas archaeological sites records and made recommendations for future National Register of Historic Places (NRHP) significance testing. No further action (ie. negative determination of significance) was recommended at 71 sites. National Register testing was recommended at 11 sites.



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## **Statements**

The study performed herein by the Contractor for the Corps of Engineers is authorized in the National Historic Preservation Act of 1966, as amended. Accomplishment of this work provides documentation evidencing compliance with Executive Order 11593 "Protection and Enhancement of the Cultural Environment" dated 13 May 1971, and Section 110 of the National Historic Preservation Act.

Funds for this investigation and report were provided by the U.S. Army Corps of Engineers. The Corps may not necessarily agree with the contents of this report in its entirety. The report reflects the professional views of the Contractor who is responsible for collection of the data, analysis, conclusions and recommendations.



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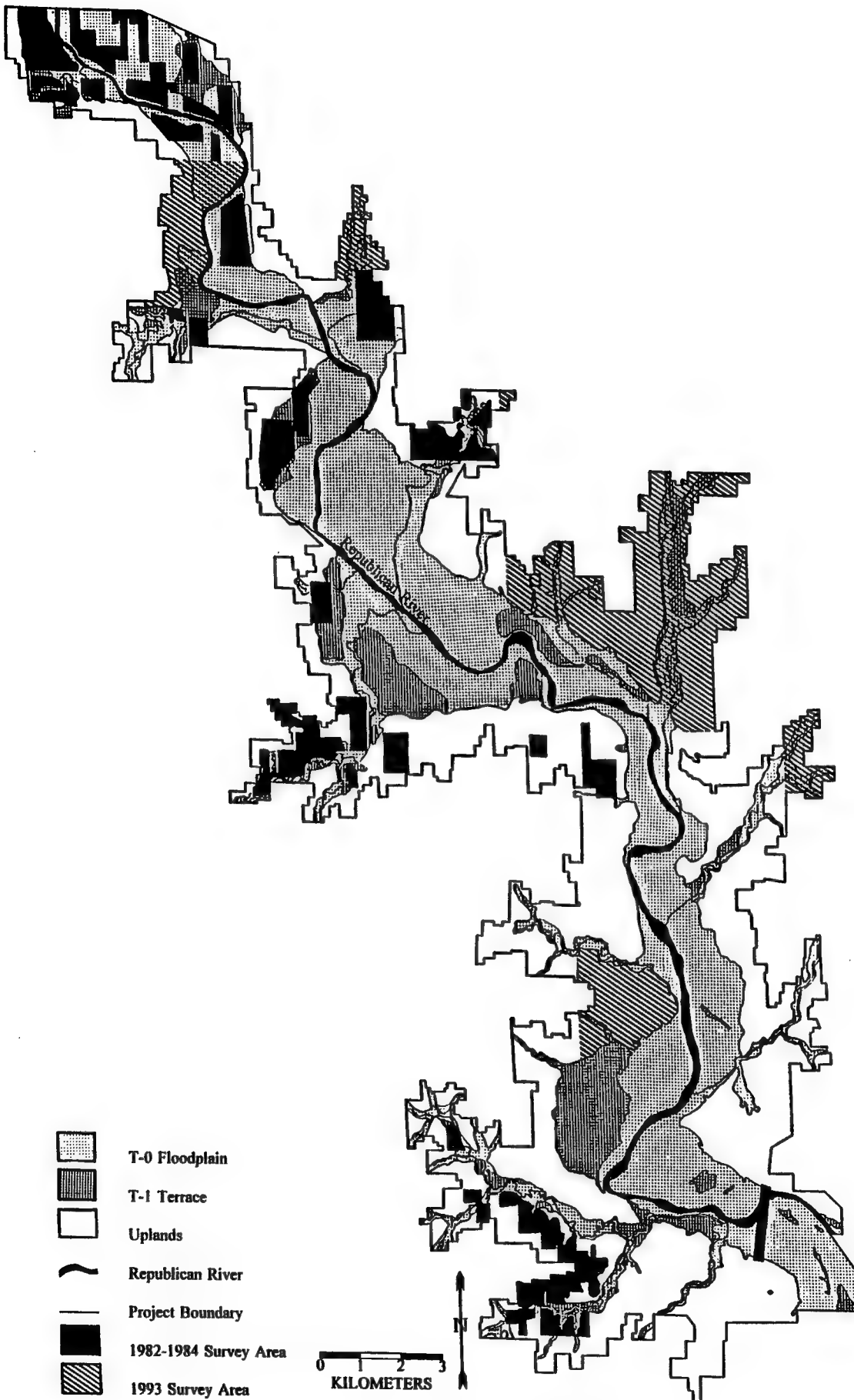


Figure 2: Map showing area surveyed during this study and during previous studies

## **CHAPTER 1: INTRODUCTION**

### **Purpose**

The University of South Dakota Archaeology Laboratory (USDAL) has conducted this cultural resources inventory and evaluation at Milford Lake in Geary, Clay, Dickinson and Riley Counties, Kansas for the U.S. Army Corps of Engineers-Kansas City District, as part of the Corps' management requirements for reservoir lands. USDAL has surveyed approximately 5,561 acres on the reservoir, lands above the shoreline that may be affected by future recreational facilities, roads and agricultural production (Figures 1 and 2).

The USDAL survey crew were as follows: Brian Leigh Molyneaux, PhD, Principal Investigator, Nancy J. Hodgson, MA, Project Archaeologist, and a field crew of C. Pat Neal, Robert Thompson, Lin Lohrmeyer, and Mary Helgevold. Additional laboratory assistance was provided by William H. Ranney, MA, and Andrew Stewart, PhD, on the lithic analysis, and Ronald I. Marvin on maps.

This project has accomplished basic cultural resources management goals including the identification of cultural properties by archaeological survey and testing, data collection and analysis from properties found, site documentation, recommendations for future National Register of Historical Places (NRHP) significance testing, and production of some materials for public education about the project and sites discovered.

### **Previous Investigations**

Floyd Schultz conducted the first reported studies of the prehistory of the area now occupied by Milford Lake during the 1920s and 1930s, collecting from sites and digging into burial mounds (see Eyman 1966, Phenice 1969, Schultz & Spaulding 1948).

In 1961 the Kansas State Historical Society excavated two sites previously examined by Schultz (the Woods site (14CY30), a Plains Village earthlodge village, and the Streeter site (14CY29), a Woodland site) and one reported by another collector (the multicomponent Avery site, 14CY301) (Witty 1963).

The University of Kansas surveyed the lake area in 1963, locating 67 sites (Muller & Schock 1964), and the University of Nebraska continued the survey in 1964 and 1965, recording 8 additional sites and excavating two village sites in the Smoky Hill area (Miller (14GE21) and Rush Creek (14GE127)) (Sperry 1965). In 1967, the Kansas State Historical Society tested the Bogan site (14GE1), a historic Pawnee earthlodge village of the Republican band (Marshall & Witty 1967; Roberts 1978).

Kansas State University conducted the first shoreline survey of Milford Lake in 1975 (O'Brien 1976), adding 20 new sites to the inventory. This institution tested 14GE41, an Early Ceramic site (Parks 1978), and the next year surveyed public use areas and recorded 32 historic sites (Schwiekhard & O'Brien 1982).

The Kansas State Historical Society surveyed the training areas of the Fort Riley Military Reservation in 1978 (Coopridier 1979). The Society surveyed areas adjacent to roads within Milford State Park in 1981 and examined several previously recorded sites (Witty 1981).

In 1982, Environmental Systems Analysis, Inc. investigated approximately 4178 acres of the licensed lands and refuge areas of Milford Lake and a further 575 acres licensed to the Kansas Fish and Game Commission in 1984 (Schmits 1988). The surveyors located 8 additional sites.

Schmits' summary of recorded archaeological components (as opposed to sites) in the Milford Lake area as of 1984 (without reference to the Coopridge (1979) survey of Fort Riley) is 112 aboriginal components (7 Plains Archaic, 36 Plains Woodland, 18 Plains Village, 1 Historic Aboriginal, 42 unknown affiliation) and 33 EuroAmerican components. These components are parts of 124 sites (92 prehistoric, 32 historic and one site with both a prehistoric component and a historic EuroAmerican component).

## **Report Organization**

The report is organized according to the specifications that were outlined in the Scope of Work, Part I, Section C, Chapter 12: Archaeological Survey Report of Findings, Item f.

Chapter 1, Introduction, outlines the purpose of the project and summarizes previous investigations in the Milford Lake area. Chapter 2, Research Goals, presents the following: a fully detailed synopsis of the research design, approved prior to the onset of fieldwork; a summary of the culture history background of the study area; a discussion of issues surrounding the delineation of subsistence-settlement patterns; a predictive model for establishing settlement patterns and settlement density (derived from Schmits 1988); and descriptions of field and laboratory methods, the processing and curation of cultural materials recovered, and National Register evaluation and recommendation procedures. Chapter 3, Environmental Context, presents background information on physiography and topography, structural geology and soils, hydrology and drainage, vegetation and fauna. Chapter 4, Regional Culture Historical Background, outlines the archaeological periods as defined for the Great Plains in general and for Kansas in particular: Paleo-Indian, Archaic, Plains Woodland (Early Plains in general and for Kansas in particular: Paleo-Indian, Archaic, Plains Woodland (Early Ceramic), Plains Village (Middle Ceramic), Historic (Late Ceramic), and Historic. Chapter 5 consists of detailed descriptions, including maps and drawings, of all the sites recorded. And Chapter 6 summarizes the results of the project, with reference to the Scope of Work and the approved research design, and presents an evaluation of the predictive model, based on the survey results.

## **CHAPTER 2: RESEARCH GOALS**

### **Research Design**

The research framework used in this project addresses pertinent State of Kansas and regional research problems as outlined by the Kansas Prehistoric Archaeological Preservation Plan and the Kansas Preservation Plan Section on Historical Archaeology (both referred to as KPP hereafter). USDAL derived the research goals from previous archaeological investigations, geomorphological terrain study, and a review of the current understanding of archaeology in eastern Kansas. Consistent with standard cultural resource management practice and following Schmits (1988:70), the research goals for the Milford Lake project can be divided into three major problem areas: (1) refinement of culture history; (2) delineation of settlement-subsistence patterns; and (3) refinement of a predictive model for site distribution.

The survey pursued these goals within several constraints beyond the general limitations of CRM surveys (ie. pedestrian surveys of surface and shallowly buried lands with restricted subsurface testing), some contained in the Scope of Work and others associated with archaeological site

conditions. First, the survey area is defined in the Scope of Work according to property boundaries as opposed to natural topographical features and at the lowest contours by the level of the reservoir. This means that no single drainage area can be investigated completely from the Republican River up tributaries into the uplands. This limits the extent of analysis concerned with the relationship of sites to topography and ecology. Second, the Scope limits the collection of artifacts to diagnostic items and a representative sample of other materials. This means that the scope of research questions based on the study of range, surface distribution (beyond measurement of simple area and density) and quantity of non-diagnostic tools and debitage on a site, questions which require the laboratory analysis of the lithics to determine their nature and function, is limited. Other constraints are related to the history of occupation and post-depositional history of sites. Any site in the survey area may have been occupied at different times throughout prehistory for similar functions, such as the extraction of riverine resources. As much of the survey area has been disturbed either by plowing or flood erosion, the integrity of stratification will have been destroyed, and so the integrity of sites and materials suitable for dating. Also, the bulk of cultural material will not likely be chronologically distinctive. This limits the possibility of studies concerned with chronology: the absence of diagnostic tools of a particular time period does not rule out occupation and use of a site during that time. And the possibility of removal of cultural materials from sites by collectors, particularly of projectile points, ceramics and other diagnostic items, affects the degree of confidence in studies based on the distribution of tool types, such as the analysis of site function.

Because of these limitations, the research goals addressed are more general problems concerning the location of sites in relation to riverine environments in the region. Such problems are outlined in the research design developed by Schmits (1988:70-85) for an earlier project at Milford Lake. Questions about the cultural resources surrounding Milford Lake have not changed substantively since his earlier work, but Schmits's design has been updated according to new data and concerns addressed by the KPP. The present survey project has used this modified design as a point of departure.

### **Culture History Studies**

Previous archaeological work within the project area and throughout eastern Kansas produced evidence of numerous sites dating to the Archaic, Plains Woodland and Plains Village Tradition periods. Although scattered finds of Paleo-Indian Clovis points are recorded in various parts of the state (Wedel 1959a), little evidence of Paleo-Indian occupation has been documented (Schmits 1988:70).

Paleo-Indian and Early and Middle Archaic period sites are common in the High Plains to the west (Frison 1978) and to the east in Missouri (Chapman 1975a). As noted in the Kansas State Plan and by Schmits (1988), data are needed to determine whether eastern Kansas was only sparsely occupied or whether the lack of evidence is due to inadequate surveying or natural taphonomic processes. Milford Lake has no evidence of Paleo-Indian occupation, leading Schmits (1988:321) to suggest that the area was not occupied or at least not intensively occupied during Paleo-Indian times.

A major goal of the present survey has therefore been to locate Paleo-Indian and Early and Middle Archaic sites, with particular attention to upland areas, away from the erosion and deposition cycles of the river valleys and colluvial wash from slopes. In addition, surveyors examined local collections for evidence of Paleo-Indian and early Archaic material, with the intention of at least identifying potential areas for sites.

The later Plains Woodland and Plains Village occupations of the area are various and complex, with type sites providing evidence of numerous periods, phases and other units of classification. It is, however, difficult to assign many sites to specific time periods or cultural groups because of

inadequate chronological and material culture information. Surveys may possibly find evidence in the Milford region of Woodland phases proposed for eastern Kansas such as the Keith focus (Wedel 1959a), Grasshopper Falls phase and Greenwood phase (Reynolds 1979) and Plains Village cultures proposed specifically for Milford Lake, such as the Smoky Hill and Republican phases (O'Brien 1978). The temporal position and social relationship between these complexes in eastern Kansas and their relations to similar cultural groups outside the state remain to be clarified (cf. Brown 1987).

The situation is similar for protohistoric and historic native peoples. Schmits (1988) notes that according to Grange (1979), the Republican band of the Pawnee, who lived in the Milford Lake area in the historic period (e.g. at the Bogan Site (14GE1), now on the shore of Milford Lake), may be linked with the protohistoric Lower Loup phase of the Plains Village Tradition. The Lower Loup phase describes a number of widely distributed local groups who developed over time into the historic Pawnee bands.

Grange (1979) also recognizes general links between the Pawnee and certain Central Plains Tradition groups through similarity in material culture. The influence of other Central Plains cultures not yet identified archaeologically may also be significant. Protohistoric sites at Milford may relate to the development of the Pawnee. Roberts (1978) concludes that a temporal gap exists between the Pawnee Kansas Monument site (14RP1) and the Bogan site (14GE1). Such a hiatus suggests that future surveys may find additional Historic Pawnee sites.

Recently, as part of the Nebraska State Historical Society's dispute with the Pawnee over human remains, NSHS staff substantially revised their notions of Pawnee origins and culture history (Nebraska State Historical Society 1991: B33; Steinacher et. al. 1991). They questioned the connections between groups traditionally considered ancestral to the Pawnee, controversially overturning decades of Plains archaeology. This issue provides the impetus for more intensive research into late prehistoric and protohistoric sites.

For historic EuroAmerican sites, the KPP has explicit recommendations for recording, based on the existence of five separate chronological periods. Sites of the period "Exploration and Contact with Native Kansans, 1541-1820" are to be recorded in their entirety as archaeological sites. In the "Period of Exploration and Settlement, 1820-1865", all sites are treated similarly, and recording is broadened to include cultural features related to such elements as transportation (trails, roads, bridges, etc.). For the 1865-1900 "Period of Rural/Agricultural Dominance", only sites of focused human settlement such as farmsteads, towns, mills, cemeteries, railroad camps and schools are to be recorded. For the 1900 to 1939 "Time of Contrasts", similar sites to the earlier period are to be recorded with focused sites, but not diffuse activities (e.g. county roads). From 1939 to the Present, "The Recent Past", sites need not be recorded, unless there are special circumstances to merit further investigation.

The archaeological study of these historic periods requires archival research as well as land survey. Researchers examine county archives, libraries and other repositories, and interview local inhabitants for information on the development of local roads, settlement patterns and the development of farming and farmsteads - and, if the informants are collectors, for further data on prehistoric sites.

Schmits (1988:324) hypothesized that more cultural groups may be present in the Milford Lake area than current data show. He also suggested that the further survey, excavation and analysis of materials at culturally 'ambiguous' sites might turn up evidence of their age and cultural affiliation.

The present survey intends to add new sites to the list and recommend additional work if warranted. This serves the management requirements of the contracting agency and furthers archaeological

research in the region, for a more precise explication of the Milford Lake area culture historical sequence is extremely important in answering questions concerning culture change and process.

### **Delineation of Subsistence and Settlement Patterns**

Little information is available in the Milford region regarding settlement-subsistence patterns. The additional survey of a number of microenvironments in the project lands provides further information about the distribution of sites in the project area.

Information from some Archaic sites (e.g. Snyder (Grosser 1973, Grosser 1977), Williamson (Schmits 1980b) and Coffey (Schmits 1978, 1980a, 1981)) suggests that such sites tend to be located in floodplain depressions which are subjected to seasonal flooding. They appear to have been dry season extractive camps that hunter-gatherers occupied during the late summer and fall; the question emerges as to where these groups lived during the winter or during the spring and early summer when the lowlands were wet or flooded. Schmits (1988) offers this question, and it is still valid.

Research on Nebo Hill (near Kansas City) settlement subsistence patterns (Reid 1980, Reeder 1980) suggests that Archaic settlement shifted between lowland sites (winter) and upland (warmer weather). Such a settlement pattern could hold for eastern Kansas as well. There has been little survey work in the uplands in the project areas of Milford Lake, with only five Archaic sites known in this physiographic zone. As the present survey of Milford project areas is mostly outside the lowland floodplain areas, on slopes and uplands, it may be possible to expand knowledge of the range of locations used for Archaic settlements.

Johnson (1992) recently questioned whether sites identified as Late Archaic might actually be a part of an Early Woodland connection that extended as far west as the Flint Hills. The Woodland period in eastern Kansas has two major cultural traditions: Plains Woodland and Hopewell. The most widespread tradition, Plains Woodland, likely emerged from earlier Archaic groups. In the Milford Lake area, Plains Woodland groups include Butler phase and Schultz focus (Early Ceramic) and Bemis Creek phase (Middle Ceramic). Hopewell has artifact styles similar to those found near Kansas City and in central Missouri to the east. The Flint Hills aspect appears to be the result of the westward migration of Hopewellian populations from the Illinois River valley (Johnson 1976).

Settlement pattern analysis has not generally been done in eastern Kansas, although Reynolds (1979:73) interprets the Grasshopper Falls phase settlement pattern as consisting of small isolated clusters or scattered individual nuclear households occupying terraces next to secondary drainages. He suggests that these groups had a sedentary lifestyle with at least part-time residence each year in domestic houses of some permanence. Henry (1979:59) suggests that Plains Woodland populations to the south in the Hominy Creek valley of north central Oklahoma were less sedentary. He characterizes this pattern as centrally focussed with small group occupation during summer/autumn and large aggregations at other times.

Johnson (1976) suggests that Kansas City Hopewell settlements were large permanent villages located near the mouths of tributaries of the Missouri River and small ancillary camps located upstream in the tributaries.

Similar settlement patterns may hold for Woodland populations at Milford Lake, as it appears likely, according to Schmits (1988), that the frequency of Woodland sites will be greater on tributaries. The survey results may therefore increase the information regarding Woodland settlement patterns in

eastern Kansas, in particular addressing the problem of the degree of sedentism among Plains Woodland populations.

Plains Village Tradition sites have been more intensively investigated in the Milford region, but again few explicit statements have been made regarding settlement patterns. Wedel (n.d., cited in Lippincott 1978) suggests that Upper Republican settlements in the Solomon River valley may be situated on larger streams; more often, however, they are on tributaries convenient to arable lands, water, wood, and perhaps to sources of lithic materials. Lippincott (1978:82) also observes that the Solomon River Upper Republican sites include small hamlets, isolated households and seasonal campsites. In the Milford region, the Plains Village populations at the Woods and Streeter sites lived in small tributary stream valleys, perhaps indicating a preference (Witty 1963).

In summary, the survey of Milford Lake areas provides some empirical data regarding Archaic, Woodland and Plains Village settlement patterns in eastern Kansas. Specific questions addressed include Archaic hunter-gatherer adaptation to upland and floodplain environments, the relative degree of sedentism represented by Plains Woodland sites and finally, the range of Plains Village settlement types.

A fundamental problem in settlement pattern interpretation in the region, from the Archaic through to Plains Village times, is the extent to which prehistoric populations preferred to settle on tributaries of major rivers and streams - and reasons why such groups may have favored these areas (e.g. seasonal movement or resource procurement scheduling). The availability of resources between major river valleys and smaller tributary valleys and uplands, and also seasonally, varies. Wetland communities in floodplains contain a large number of edible annual weedy plants which produce seeds during the summer and fall, such as chenopods and amaranths. In the uplands, floral resources such as tubers are generally available in the spring. Similar variations exist in the distribution of animal species: antelope and bison range in the uplands while deer occupy the riparian forest community.

Prehistoric peoples dependent on these plant and animal species would have been sensitive to these variations and would have adjusted their exploitative patterns accordingly. However, the role of various floral and faunal communities in the settlement-subsistence patterns of eastern Kansas is not fully understood. The data from the Milford survey may contribute towards a better understanding of their role through the distribution of sites in each community.

### **Predictive Model**

Schmits (1988) developed his predictive model according to procedures recommended by Aldenderfer & Bezsylo (1981:21) who, in Schmits' words (1988:74), stated that "the most reliable predictive models are based on well-structured, comprehensive sampling strategies designed to provide quantitative estimates of site distribution in reference to a postulated settlement pattern". Such an approach allows predictive statements to be made about "location, site type and assemblage content" (Schmits 1988:74) for a given environment.

Within the limitations imposed by the actual on-the-ground situation in the survey area, one of the objectives of this project is to expand the data available for the evaluation of a subsistence-settlement model for the area proposed by Schmits (1988).

Schmits (1988:332-34) studied the relation between terrain and settlement in a survey of Milford Lake lands in 1982-84 and compared his results with earlier surveys of the area. His analysis of sites in the 1982-4 survey indicates that a disproportionate number are on river terraces. By simply calculating the



proportion of sites found in his 1982-4 survey to number of acres surveyed in each terrain area he produced a site frequency of .72 sites per section on lowland terrain (T-0) (14 percent of total), 5.25 sites per section on the T-1 terrace (71 percent of total) and .71 sites per section on upland terrain (14 percent of total). Based on his analysis of previous work in the Milford area, however, he suggests that future surveys will produce data that shows a much higher density of sites along the tributaries and in the uplands than predicted by his own survey work. In previous surveys, 68 percent of the sites discovered were on uplands (Schmits 1988:56).

In general Schmits predicts that prehistoric sites will be located mainly on the uplands, with smaller numbers on T-1 terraces. Specifically, he contends that more Plains Archaic and Plains Woodland components will be upland while Plains Village will be on T-0 and T-1. Historic sites should also be mainly in upland locations. He further suggests that very few surface sites will be located on the T-0 terrace, with sites deeply buried based on probable aggradation of the Republican River between 2500 B.P. and the present. Even recent sites may be buried. This fits well with very recent geomorphological research in the region, as geomorphologists now study deeply buried archaeological sites to learn more about landscape formation (e.g. papers by Bettis (1993) and Mandel & Bettis (1993) at the 1993 Society for American Archaeology meetings in St. Louis).

Given Schmits' predictions concerning settlement patterns and the need for continuity in research in the Milford region, the present survey uses a similar terrain-oriented analysis as part of a study of settlement and subsistence.

### **Field and Laboratory Methods**

The field and laboratory methodologies for the Milford Lake project were designed to address the research goals discussed above.

#### ***Field Survey and Testing***

The survey staff consisted of six persons divided into two teams, the size of the team depending on dimensions of specific survey areas. The field investigation was by pedestrian survey, using transect sampling techniques (see, for example, Schmits 1988). In transect sampling, the surveyor traverses an area along a previously selected route while maintaining a constant distance from other members of the survey crew. The transect routes were linear or curvilinear, depending on the nature of the terrain. Intervals between transects for the survey at Milford Lake varied to a maximum interval of 35m, depending on the field conditions and on circumstances relating to the research problems addressed. Surveyors noted the date, transect designation, transect orientation, transect dimensions, environmental data, drainage systems, ground visibility and vegetation for each survey transect area (in practice, areas defined either culturally, e.g. fenced fields, or naturally, by ecological zones, e.g. a section of shoreline).

After surveyors located a site they flagged its visible periphery and intensively searched the entire area, collecting diagnostic artifacts and a representative sample of other surface materials. They mapped the sites and plotted the locations on standard USGS air photographs - precisely locating them in the survey area - and on USGS 7.5 minute quadrangle maps.

The survey adopted shovel testing in zones of poor surface visibility, where vegetation covered the ground surface and where there were no subsurface indicators, such as cutbanks, eroded slopes, and rodent burrows. These shovel tests exposed a limited area of surface and shallow subsurface soil; the surveyors searched this for cultural material and evidence of atypical, organic soils conventionally



associated with extensive occupation deposits. Where warranted, they placed tests at 20m to 35m intervals along survey transects or as field conditions dictated. They backfilled all shovel tests.

When surveyors required information beyond the shovel test to assess the subsurface character of the deposit, they excavated a single test square up to one meter in size and in 25 centimeter levels. Such tests clarified the depth of deposit and helped determine whether a site had multiple components or *in situ* features. The survey crew also used auguring to investigate the subsurface, where warranted.

In addition to the field methodology discussed above, the testing of historic sites involved documentary research, including examination of land records, histories, and atlases. These records provided information about the ownership and nature of the historic properties in question, as well as data relating to the significance of each property. The field methodology for historic sites did not deviate substantially from the procedures used on prehistoric sites, although historic properties had structures such as foundations, walls, floors and landscape features which required more extensive recordation.

### ***Laboratory Methods***

The laboratory analysts at USDAL first sorted the cultural material recovered from the sites into raw material categories, in this instance following the approach used by Schmits (1988). Prehistoric finds in the present survey consisted of artifacts and production waste materials in a variety of cherts and jaspers, dominated by Flint Hills chert. Surveyors found one pottery sherd. Ceramics, glass and metal made up the historic material culture inventory.

The classification exposed the technological variability in the sample and yielded some information about cultural history and settlement-subsistence patterns. Interpretation of the material was necessarily limited by the fact that only a representative sample of material was recovered.

### ***Prehistoric Lithic Analysis***

The classification of lithics combined elements of both morphology and function, following Chapman (1977).

#### **Retouched Pieces [Tools]**

First, the analyst sorted the assemblage into categories according to the presence or absence and type of edge retouch present - facial or marginal.

There are two general categories of retouch, defined by the length of retouch scars relative to the area of the working surface. In facial or invasive retouch, the scars extend from the edge over one-third of one or both surfaces of the tool. This causes extensive changes in the form of a piece of debitage. In marginal retouch, the scars extend from the edge perimeter over less than one third of either surface.

Within these two categories of facially retouched tools are several functional tool classes, defined by morphology (shape), placement of working edge, edge shape and evidence of edge damage.

The inventory included lithic material in almost every category of preparation, depending on the stage that the material entered the archaeological record: raw material and exhausted cores, utilized flakes, preforms and finished tools, repaired or reworked tools.

Analysis was potentially complicated because some tools may have change shaped as their function changed, such as a biface that became a projectile point and then a knife or scraper. Other tools may have served a variety of cutting and scraping tasks. It was often most efficient to assign a tool category according to its general morphology. In this instance, the analyst still classified a projectile point with secondary evidence of other uses as a point.

### Edge Shape and Wear Patterns

Many attributes of edge shape pertain to the function of the tool. Scrapers tend to be more robust and have steeper edges than cutting tools (cf. Isaac 1977). Edge shapes may be concave, straight, convex, or concave-convex.

A projection is a 'pointed' edge. It may be a natural attribute of a piece or a form that the knapper makes by retouching the edge.

The angle of the working edge may also indicate tool function. Use-wear studies of artifacts and replicated tools suggest that specific angles are necessary for various functions and materials. Hide-working requires the steep angles that are associated with scrapers, while cutting action requires the 15 to 25 degree angles commonly found on artifacts labeled as knives.

Wear patterns are also commonly studied in lithic analysis. They are physical changes in a tool created by use. Four classes of wear patterns are commonly defined: step fracture, attrition, polish and battering. The analysis of wear at a macroscopic level is, however, highly problematic (Young & Bamforth 1990), as such attributes may have been caused during manufacture or other cultural activity (e.g. during transport) or by natural agency (e.g. impacts during redeposition).

### Bifacial Tools

Bifacial tools have the removal scars of flakes on two surfaces. Several functional classes define their shape and the interpretation of their use.

Projectile points are symmetrical bifaces with hafting modifications such as side or corner notches, a basal stem or shoulder, or thinning of the base by removal of one or more large flakes. Bifacial tools that resemble projectile points but have no hafting modifications are included in this category. At Rodgers Shelter, Ahler (1971) suggests that tools generally classified as projectile points exhibit wear patterns associated with other usages. It is also possible to find wear patterns indicative of hafting on nondescript triangular flakes, suggesting their use as projectile points. Small, symmetrical, triangular bifaces with or without hafting modification, whose distal margins converge to a point are referred to as arrow points.

Bifacial knives are thinned, unstemmed bifaces, generally of triangular or ovate form, with shape and edge patterns appropriate for cutting. A knife may have at least one edge with wear, but this may result from platform preparation or fine retouching, or from use as a scraper.

Bifacial scrapers have steep marginal retouch conducive for scraping. Many of these tools have been adapted from projectile point preforms, reworked points or other tools.

## Unifacial tools

Unifacial tools are mainly retouched on only one surface. End scrapers are the most characteristic form. These tools are oval or roughly triangular in shape with a steeply angled, outwardly curved working edge and flaking over most of the dorsal surface.

## Marginally Retouched tools

Marginal retouch describes a tool that is modified along more than one third of its perimeter. Such tools include flake scrapers and perforators. Flake scrapers generally have a steep angle of retouch, whereas perforators have a projection suitable for piercing.

## Edge-Modified tools

Edge-modified tools are usually flakes that exhibit marginal retouch along one or more edges. These are usually subdivided into debitage categories such as edge-modified flakes or edge-modified chunks. Such tools will generally see one episode of use, rather than being curated or maintained.

## Utilized Flakes

Although not a formal tool in the sense that the specimen exhibits intentional flaking, utilized flakes are included within this category under the assumption that they have been intentionally used as tools. Flakes are 'utilized' if one or more edges display concentrations of small step fractures while other edges do not. Few flakes are assigned to this category, as other cultural or natural factors may produce such fractures (see Young & Bamforth 1990).

## Production Discards and Lithic Manufacturing Debris

Debitage is produced by all stages of manufacturing, from early testing of the raw material and core reduction, to final shaping and then re-working of tools. Debitage consists of the generalized waste flakes and shatter detached by direct or indirect pressure or percussion during the reduction of cores and manufacture of chipped stone tools; such flakes exhibit no evidence of post-detachment modification such as intentional retouch or utilization.

## Bifacial Blanks

Bifacial blanks are pieces that have not been fully shaped according to their intended use: unfinished tools and tools broken during manufacture, bifaces discarded due to flaws in the raw material, or preforms (tools intended for later reduction into points or knives).

## Cores

Cores exhibit patterned negative flake scars from which flakes were removed by direct or indirect percussion. Several morphological classes are recognized based on the size, shape, degree of platform preparation and flake scar patterning observed: block cores, tabular cores, nodular cores, and prepared cores.

Core nuclei are worn out or exhausted pieces of chert with negative flake scars. Given the small size and degree of reduction, it is not possible to determine whether they were derived from any of the types described above.

Core fragments are variously shaped pieces that exhibit evidence of both systematic flake removal and natural, angular cleavage planes. They are probably sections of larger block cores or tabular cores that prematurely fractured along pre-existing planes.

### Chunks

Chunks are angular multifaceted pieces of chert that have none of the systematic flake removal associated with cores or any of the morphological characteristics of flakes. Most are trimming elements removed during the initial reduction of a core or material that was discarded as a waste by-product during lithic manufacture.

Cortical chunks are simply chunks that exhibit one or more cortical surfaces.

### Flakes

Flakes are recognized by the morphological characteristics of striking platforms, bulbs of percussion and ripple marks. In bifacial reduction sequences (Callahan 1979); this category includes primary (decortication) flakes, secondary (intermediate) flakes, and tertiary (trimming) flakes and chips.

Decortication flakes have a minimum dimension of 2 cm and exhibit at least 50 percent cortex on their dorsal surfaces. Secondary flakes are large, with prepared or unprepared platforms, often resulting from thinning.

Bifacial trimming flakes are recognized by the presence of multifaceted platforms which exhibit characteristic 'lipping' of the striking platform over the vertical surface of the flake. These elements are very thin and possess small negative flake scars on their dorsal surface. Bifacial trimming flakes represent the final stage of lithic tool manufacture and maintenance.

### Shatter

Shatter consists of small pieces of irregular chert that lack the characteristics of flakes. Shatter bears little or no evidence of conchoidal fracture. It may have resulted from breakage along the chert's natural cleavage planes, excess force applied during lithic reduction, heat treatment, trampling or noncultural factors such as freeze-thaw action. Some shatter may actually be unidentifiable flake fragments.

### *Prehistoric Ceramics*

Ceramic identification followed the nomenclature presented in Butler & Hoffman's (1992) categories for Plains ceramic types and wares for sites with ceramics in the project area. The categories discussed by Butler & Hoffman consist of named wares and accompanying types organized by major geographic area. This typology was presented by the authors as tentative, reflecting the lack of consensus in Plains ceramic classification (Butler & Hoffman 1992:8), but it provides a basic structure within which refinements can be made according to the area under study.

Milford Lake has no local typology (cf. Schmits & Bailey 1988); the interpretation of the single sherd was therefore based on wider regional analogies. There are sites with both Plains Woodland and Plains Village ceramics here, with Woodland ceramics coming mainly from burial mounds and Plains Village ceramics from earthlodges. Plains Woodland ceramics assigned to the Early Ceramic Schultz Focus occur in the northern part of the Flint Hills physiographic region (Brown 1987), which includes

Milford Lake. The eight Plains Village sites excavated in the Milford area are assigned to the Smoky Hill phase (Schmits & Bailey 1988:315), but there is some debate about the relation of this phase to two later regional phases, the Upper Republican (as suggested by O'Brien (1978)) and the Nebraska (as suggested by Steinacher (1976)).

Brown's studies of regional ceramics (Brown 1984, Brown 1987) are also relevant, as they present a more detailed range of traits for ceramics categories that might exist here, but USDAL did not use Brown's scheme in the creation of a cultural historical framework for the area since phases may overlap temporally.

### ***Historic Artifacts***

The analysis of historic artifacts from the Milford Lake project is primarily descriptive, and secondarily temporal. Although it is possible to deduce a measure of socio-economic status from the total assemblage of an historic site (e.g. Comer 1985), this intensive survey report does not attempt to do so. Temporal information for the historic sites is more accurately derived from available records in the local county courthouses and histories. As the historic sites are all disturbed by modern agricultural activity, the presence or absence of time-specific artifacts cannot be used as a means of determination of the specific date of occupation of a site. However, it is possible that the entire sample of a site may fall within a specific period of time.

Although the primary evidence for the location of historic sites in the survey area is archival material, especially plats and engineering plans, the collection of historic artifacts was still regarded as an important component of the survey. In a few instances, the identification of structural remains revealed the presence of EuroAmerican structures not shown in the record searches (e.g. lime kiln sites 14CY115, 14CY116).

Structural evidence from the Milford Lake survey consists of limestone drywall, limestone mortared, concrete, cinder block, and brick foundations, concrete floors or pads, brick chimneys and window glass. Surveyors also found scattered historic artifacts and refuse dumps.

Limestone construction is ubiquitous around Milford Lake, as limestone forms the basement rocks of the region. Drywall and mortared limestone are generally associated with earlier construction, ie. during the homestead period, when more costly and sophisticated materials, such as concrete, were unavailable. Concrete is a combination of an aggregate comprised of sand with gravel, stone chips, or crushed slag, and lime or cement as a binder. Lime-based concrete was the dominant form well into the 19th century, as it is simple to produce, although not very durable. Beginning in the 1820s in the US, however, natural cement, stronger and waterproof, came into use and was then succeeded by portland cement, invented in Britain in 1824 and mass produced in the US beginning in the 1870s. The major impetus to the use of concrete came after 1880 with improvements in reinforcement technology, and soon after the turn of the century, the material became commonplace in house and farm construction (e.g. as suggested by the Atlas Portland Cement Company's 1905 publication "Atlas Portland Cement Company's Concrete Construction about the Home and Farm")(Massey & Maxwell 1994).

Bricks can sometimes be used to broadly date the construction of individual structures, based on the manufacturing process (Gurcke 1987). Three basic production processes can be identified: 1) the soft-mud method; 2) the stiff-mud method; and 3) the dry mud method. All three methods developed by the 19th century, but their adaptation in any geographic locality depended on local industrial development and transportation routes.

The soft-mud method is the oldest process of brick manufacture; the wet clay is poured into a box mold and the top is struck off by hand using a flat blade. Utilization of box molds dates back 5000 years, to the Bronze Age in Jericho (Gurke 1987:15). Hand-struck, soft-mud bricks persisted as a common form until 1920, when a machine-struck, soft-mud brick process appeared. Still, all soft-mud method bricks have a single struck face which can be used to identify the striking process.

The stiff-mud method is a fully mechanized operation, in which a column of clay is extruded and then cut. Originally, the bricks were end-cut; this procedure was replaced by side-cutting. These are the two identifying characteristics of stiff-mud, extruded bricks. The stiff-mud method became common in this region at the end of the 19th century.

Brick-makers did not perfect the dry clay method until the first part of the 20th century, eventually replacing the stiff-mud process. It is now the primary brick type in use and is identified by the smooth surfaces of the brick.

Bottles also provide temporal information based on manufacturing process. Bottle glass described within this report utilizes the terminology for bottle characteristics and types provided by Fike (1987).

Dating of bottles relies mainly on the production techniques evident on the neck and rim, although mold seams also give a range of dates. The hinged bottom mold, typically produced a bottle with a seam across its bottom and up its sides, was prevalent between 1810 and 1880. The three-part mold was used between 1870 and 1910 and shows either a round seam on the base and seams up the sides or a seam around the bottle just below the shoulder with seams extending up the shoulder and neck. The side seams for both types of molds ended part way up the neck, due to the hand applied lip (Rock 1981:4-5).

Applied or laid-on ring lips were common between 1840 and 1920. Hand applied lips that glassblowers produced from 1840 to the 1860s exhibit a crude or rough appearance, while lips they produced after 1870 are more uniform due to the invention of the lipping tool. From 1880 into the early 1990s, hand-applied lips were fired and reheated to a polish. Closures for hand-applied lips included a wide variety of stoppers. Additionally, clear glass produced between 1880 and 1920 is typically amethyst in color when found, because the manganese content turns the glass purplish when exposed to the sun (Rock 1981:8-9, 17).

Michael J. Owens invented the automatic bottle-making machine in 1903 and patented it in 1904. One can identify machine-made bottles by their continuous mold seams running up the sides and onto the top of the lip. By 1920, screw top bottles with outside threads were typical (Rock 1981:5).

Modern ceramics provide only a broad time frame for dating deposits; they are more useful in providing clues to economic status. In general, a predominance of transfer ware indicates mid-19th century occupation, while white ironstone (whiteware) is found most commonly on sites of the late 19th to early 20th century. Solid colors appear in the Depression era and continue into the mid 20th century. Only manufacturer's marks on the base of vessels can provide exact production dates.

### **Processing of Materials and Curation**

Cataloging procedures followed guidelines established by the Kansas State Historical Society. All materials from Milford Lake are presently curated at the University of South Dakota Archaeology Laboratory repository on loan from the Kansas State Historical Society repository.

## **Recommendations**

Recommendations with regard to potential National Register of Historic Places eligibility for the sites encountered during the survey follow four basic criteria: (1) the physical condition of the site, (2) the site content, (3) its relationship to regional research questions, and (4) the expected impact on the site. The first three evaluate the research potential of the site and the fourth is used for making recommendations for mitigation, if required.

USDAL surveyors estimate site condition on the amount and nature of post-depositional disturbance by such agents as natural erosion, plowing, construction activities and road building. The content of the site is the archaeological features or remains the surveyors record or observe. They examine the knowledge they gain about a site in relation to the most current understanding of regional prehistory and history and assess the potential value of this new information.

These three major factors are useful in judging the relative significance of a particular site, with recommendations ranging from no additional work to further testing to determine NRHP status or mitigation.

If USDAL judges a site to be 'not significant', it recommends no further work. This does not mean the site is of no interest as an archaeological manifestation, but rather that further work would not likely increase our knowledge base beyond that acquired in survey and testing. Destruction of these sites will, therefore, not seriously affect the data base for the region.

If USDAL judges a site to be 'significant' on the evidence of survey results, there are a limited number of options. The preferred option is avoidance or preservation (King 1975, Lipe 1974, Wendorf 1978) and where this seems feasible, USDAL recommends it. Preservation may include simply withholding site location information or protecting it. Typically, initial survey results are not sufficient to judge significance; in such instances, USDAL will recommend further National Register testing.

## **CHAPTER 3: ENVIRONMENTAL CONTEXT**

### **Physiography and topography**

Milford Lake is situated in the valley of the Republican River, cutting through the Flint Hills Uplands region. It is an environmentally complex unit, as it covers two physiographic provinces. Most of the lake is in the Central Lowland Province, Flint Hills subprovince. The remainder, the Clay County tracts, are in the Great Plains Province, Smoky Hills subprovince (Mandel 1987:III-5).

The topography in the reservoir area consists of high, but gently rolling hills, reflecting the impact of the Kansan glaciation. In general, the limestone bedrock presents a barrier to erosion, so that hillslopes are generally steep, sometimes rising more than 100 feet above valley floors to fairly flat-topped hills. The uplands are deeply dissected by drainage features: rills, gullies and creeks drain into the Republican river (now Milford Lake). The original Republican floodplain was broad in the present reservoir area, as were the mouths of tributary creeks, with terraces and benches at the base of some hillslopes.



## **Structural geology and soils**

The Flint Hills consist of Permian rocks, dominated by surface rocks of shale and chert-bearing limestone, with some sandstone, gypsum, rock salt and siltstone (Schoewe 1949). The bedrock sometimes crops out on steep slopes and frequently on severely eroded hilltops and along the shore of the reservoir. The cherts grade from dull, coarse types to glassy, fine grained flints. At Milford Lake, the chert occurs as nodules in Florence limestone, a part of the Barnstone formation; below it is Blue Springs shale of the Matfield formation (Schwiekhard & O'Brien 1982).

Florence chert has two forms, described as Florence A and B. Florence A is tan to brown in color, contains a variety of fossils, and is commonly banded (Haury 1981:46). There are prehistoric quarries of this material near Maple City in Cowley County, Kansas (Wedel 1959a). Florence B occurs farther north in the Flint Hills and is ubiquitous in bedrock and as eroded debris around Milford Lake. It is dark or blue gray with silicified echinoid spines and other fossil fragments (Haury 1981:46).

The soils reflect this general range of parent materials. A loess mantle covers the bedrock, deposited in both Pleistocene and post-Pleistocene times - through the 1930s - on the uplands, sideslopes consist of colluvium derived from bedrock and reworked loess, and the terraces and floodplains contain alluvial deposits of reworked loess and colluvium from eroded bedrock.

## **Hydrology and drainage**

Milford Lake is situated in the valley of the Republican River near its confluence with the Smoky Hill River, the two forming the Kansas River. Creeks that formerly drained into the Republican - Curtis, School, Quimby and Cain on the west side, and Rush, Farnum, Madison, Timber, Mall, and Lincoln on the east side - dissect the uplands surrounding the reservoir and, with their alluvial deposits, define its present shoreline and topography. The original floodplain was up to 2 km wide and the valley bottom is as much as 24 meters thick (Fader 1974). Geomorphological research in the East-Central Plains provides some hypothetical interpretations of the history of the Republican River during the Late Pleistocene and Holocene. During the early human history of the region (at the end of the Pleistocene), evidence from Missouri and from the upper Walnut River basin in the southern Flint Hills of Kansas (Artz 1984) suggests that the Republican was in a terrace-building stage; between 2000 and 1000 years ago, however, the fluvial pattern changed and streams began to downcut. Mandel & Schmits (1988) suggest that the meandering of the Republican River over the last 3000 years removed most older sediments. The upper several meters of the floodplain will therefore be relatively recent (ie. within the last 2500 years) and younger than any surviving terraces of the earlier aggradational regime. Mandel & Schmits (1988:31) conclude that: the T-1 terrace at Milford Lake contains a modern surface and a stable soil with Plains Woodland to Plains Village aged cultural material within or just below the plowzone. Below the plowzone, the sediments should correlate in age from late Pleistocene and early Holocene at the base to middle and late Holocene near the surface, roughly 12,000 to 3000 years B.P..

The hypothetical model for the regional hydrology therefore suggests that early sites may exist in the uplands and buried under more recent sediments on the surviving terraces; sites on the floodplain will be more scattered and recent, due to the meandering of rivers and creeks. The potentiality for sites in lowland areas is also diminished by the accumulation of post-settlement alluvium, which may bury older land surfaces out of reach of conventional archaeological survey.



## **Vegetation**

The primary vegetation relevant to the survey (ie. affecting ground surface visibility) is tallgrass prairie, dominated by big bluestem (*Andropogon gerardii*) and little bluestem (*Andropogon scoparius*) along with Indian grass (*Sorghastrum nutans*) and switchgrass (*Panicum virgatum*). Lowlands, gullies and hillsides may also support largely deciduous forest species, dominated by oak-hickory forest (*Quercus-Carya*) and floodplain forest (*Populus-Salix*). These include cottonwood, oak, elm, hackberry, locust, ash and red cedar.

Agricultural lands may have fallow grasses and herbs growing wild and plantations of milo and sorghum, grown as feed for upland game birds.

## **Fauna**

The fauna of the prehistoric environment, as archaeological evidence shows, included bison, elk, deer, wolves, beaver, foxes, raccoons, squirrels, rabbits, wild turkey, grouse, quail, and migratory birds, fish, and mollusks (Wedel 1959a:12).

## **CHAPTER 4: REGIONAL CULTURE HISTORY BACKGROUND**

Milford Lake lies within two physiographic subprovinces, the Central Lowlands and the Great Plains, and so Milford Lake archaeology and history exhibit some unique characteristics, but also have ties to the archaeology of the neighboring subprovinces. Brown (1987:XII-1) considers the Flint Hills to be fairly well known for the Archaic, Early, Middle and Late Ceramic Periods.

### **(a) Paleo-Indian**

No evidence of Paleo-Indian occupation in the reservoir area has been documented (Schmits 1988:70).

### **(b) Archaic**

The Archaic Period in the Flint Hills has seven reasonably well-defined cultures: 1. Logan Creek complex; 2. Munkers Creek phase; 3. Black Vermillion phase; 4. Chelsea phase; 5. El Dorado phase; Vermillion phase; 6. Nebo Hill phase; and 7. Walnut phase. Black-Vermillion sites occur more frequently in the Glaciated Region, while Nebo Hills sites prevail in the Osage Cuestas. Many sites resemble Plains Archaic, but the small amount of lithic material precludes detailed comparison to other sites (Schmits 1988:321). The Archaic is much less well known from the Smoky Hills. Late Archaic sites exist at Milford Lake, but there is little evidence of Early and Middle Archaic in the area.

### **(c) Plains Woodland (Early Ceramic)**

As the KPP states, a number of Early Ceramic phases have been proposed for the Flint Hills and Smoky Hills. In the Flint Hills, the Early Ceramic has three defined cultures: 1. Butler phase; 2. Schultz focus; and 3. Greenwood phase. In the Smoky Hills it is represented only by the Keith variant.

### **(d) Plains Village (Middle Ceramic)**

Flint Hills Middle Ceramic has three defined cultures in the Bemis Creek phase, Smoky Hill variant and Steed-Kisker variant. In the Smoky Hills there are three defined groups including Smoky Hill

variant, Upper Republican variant and the Pratt complex which usually appears farther south in the Arkansas Lowlands.

The culture historical position of many Plains Village/Middle Ceramic sites is ambiguous. Wedel (1959b:629) suggested a possible transition from Smoky Hill to Upper Republican. O'Brien has assigned sites at Milford Lake to the Smoky Hill and Upper Republican variants (O'Brien 1978).

#### (e) Historic Native American (Late Ceramic)

For the Late Ceramic in the Flint Hills the emphasis is primarily south with the Great Bend aspect of the Arkansas River Lowlands. Similarly, Late Ceramic occurs infrequently in the survey segments in the Smoky Hills. White Rock, Dismal River, Great Bend and historic Apache are all further west in the High Plains or south in the Arkansas Lowlands.

The Republican band of the Pawnee occupied the Milford Lake area in the Historic period, emerging from the Lower Loup phase of the Plains Village Tradition, according to Grange (1979). The Kansa apparently forced them out of the area (O'Brien 1978).

#### (f) Historic EuroAmerican

For historical archaeology and the study of EuroAmerican populations, the KPP (ie. Lees 1989:79-80) provides five chronological contexts: 1541-1820, "Exploration and Contact with Native Kansans"; 1820-1865, "Period of Exploration and Settlement"; 1865-1900 "Period of Rural/Agricultural Dominance," 1900 to 1939 "Time of Contrasts", and 1939 to the Present, "The Recent Past".

Camp Center, a military fort built at the meeting of the Republican and Smoky Hill rivers in 1852, was the first recorded settlement in the Milford area. It became Fort Riley the following year. Geary County and the town of Milford were established in 1855. Settlers first occupied Clay County in 1856 (Andreas 1883:999-1013), with Wakefield as the main town and then, in 1862, Clay Center, the county seat, was founded. From these beginnings, the Milford area has developed as an agricultural landscape and, at Fort Riley, as a military training ground.

In summary, the archaeological and historical records at Milford Lake mirror much of the rest of eastern Kansas, but with connections to the west, north and south. The area appears to reflect an indigenous development from a series of Plains Woodland cultures to Plains Village to historically known tribes or cultures, until EuroAmerican settlement forced the aboriginal people out of the region.

## CHAPTER 5: SITE DESCRIPTIONS

The project area consists of six discrete, non-contiguous parcels of land. Each parcel has a descriptive name and each site has a field number based on the land parcel designation. In the order surveyed, the parcel designations are: Smoky Hill, River Bend, Mall Creek, Timber Creek, Farnum Creek, and Madison Creek. The parcel abbreviations used to prefix field numbers of sites found are, correspondingly: SH, RB, MC, TC, FC, and MAD.

The individual site descriptions that follow are by parcels and are in order by field number - generally the order of discovery. A brief description of each land parcel and a map showing all the sites found therein introduces each group of site descriptions. Eighty-three sites are described: 51 prehistoric sites (11 previously recorded) and 32 historic sites.

It must be emphasized that the interpretations made here about the age, function and cultural affiliation of sites is done with the following qualifications. First, the results of any pedestrian survey of exposed, ground surface material are potentially affected by the impact of artifact collectors (who may only remove lithic tools and ceramics, but sometimes may take all visible cultural materials). Second, it is not possible without formal excavation to investigate more precisely the nature of the site, i. e. to consider whether or not the site had a single or multiple occupations. It is therefore impossible to determine from this survey whether the activity there was confined to one time period or limited to a single event and function.

## **SMOKY HILL**

The Smoky Hill parcel lies largely in Geary County, Smoky Hill township, with a small section in Milford township. It is an upland area which now extends as a peninsula eastward into Milford Lake. A number of sites have been previously recorded here, with the largest being the Bogan Site, 14GE1, an historic Pawnee village (Marshall & Witty 1967) situated at the eastern end of the headland.

The survey located ten sites in the Smoky Hill area (Figure 3): 6 prehistoric sites (3 recorded previously: 14GE45, 14GE131, and 14GE42), and 4 historic sites. Surveyors did not find two other previously recorded prehistoric sites: 14GE44 and 14GE43. As flood stage wave action has severely eroded the Smoky Hill headland, these sites may have been destroyed. We examined the surface of the Bogan Site (14GE1) for any evidence of erosion or disturbance by collectors but did not attempt further investigation. It was effectively hidden by heavy plant growth.

## **RIVER BEND**

The River Bend parcel lies in a major bend of the Republican River in Clay county, Union township. The land surveyed ranged from the western hillslopes of the Republican River valley to the lowest terraces above the floodplain; the floodplain itself was under water. The survey located seven sites in the River Bend area (Figure 4): 6 prehistoric (two recorded previously: 14CY46 and 14CY47), and 1 historic.

## **MALL CREEK**

The Mall Creek parcel lies on either side of Mall Creek, covering parts of four sections of Grant township in Clay county. The terrain in this parcel includes floodplain, terrace and upland areas. Surveyors located 10 sites in the Mall Creek area (Figure 5): 5 prehistoric (3 recorded previously: 14CY25, 14CY42, and 14CY57) and 5 historic. The surveyors could not relocate two other previously recorded sites in the area, 14CY23 and 14CY102. Archival researchers discovered that the name 'Moll Creek', as designated in Corps of Engineers maps, is erroneous. According to the Atlas of Clay County (1881), Jacob Mall settled in Grant County in 1860 and gave his name to "Mall Creek".

## **TIMBER CREEK**

The Timber Creek parcel lies along a steep bend and deep ravine on Timber Creek in Riley county, Madison township, adjacent to the border with Clay county. It is entirely within lands leased as part of the Ft. Riley Military Reservation. The land here ranges from rugged, limestone-capped hills to the creek bottom. The area has been heavily chewed up and eroded by tanks. The survey located three prehistoric sites on the upland and slopes south of Timber Creek (Figure 6). One of the sites is outside the actual survey area (across the Clay county line) but has been included because it falls within the area of potential impact of any activity on the adjacent property.

## **FARNUM CREEK**

The Farnum Creek parcel of land in Milford township, Geary county, borders Farnum Creek and a tributary entering from the east. The topography ranges from floodplain to uplands.

Like the Timber Creek survey area, it is also on Ft. Riley Military Reservation and shows

evidence of heavy damage by tanks. The survey located 11 sites in the Farnum Creek area (Figure 7): 8 prehistoric and 3 historic.

## **MADISON CREEK**

The Madison Creek parcel, the largest of the six areas, is within the borders of Ft. Riley and on both sides of Madison Creek. Most of the area lies in Milford township, Geary county; the area north of Kansas highway 82 is in Riley county, Madison township. The land here ranges from terraces and uplands near the mouth of the creek to muddy and dry floodplain areas at higher elevations.

The survey located 44 sites in the Madison Creek area (Figure 8) and described 42 of them (surveyors noted two excavated mounds, 14GE2 and 14GE3, but observed no cultural material beyond the destroyed cists). Twenty-three of these sites are prehistoric (3 recorded previously: 14GE4, 14GE29, 14GE51) and nineteen are historic. Three sites recorded previously were not relocated: 14GE41 appears to have eroded into the lake, as the shore has some extensive wave damage; shovel testing at the locations identified as sites 14GE27 and 14GE27 failed to recover any cultural material.

Five sites are now under the waters of Milford Lake (14GE23, 14GE24, 14GE25, 14GE22, and 14GE28).

The surveyors were not informed of an ongoing cultural resources survey on the Fort Riley Military Reservation (John Dendy, pers. comm.) prior to, or during the fieldwork portion of this project. Therefore, the findings at Madison Creek, with one exception, do not reflect any input from, or coordination with, the Fort Riley project.

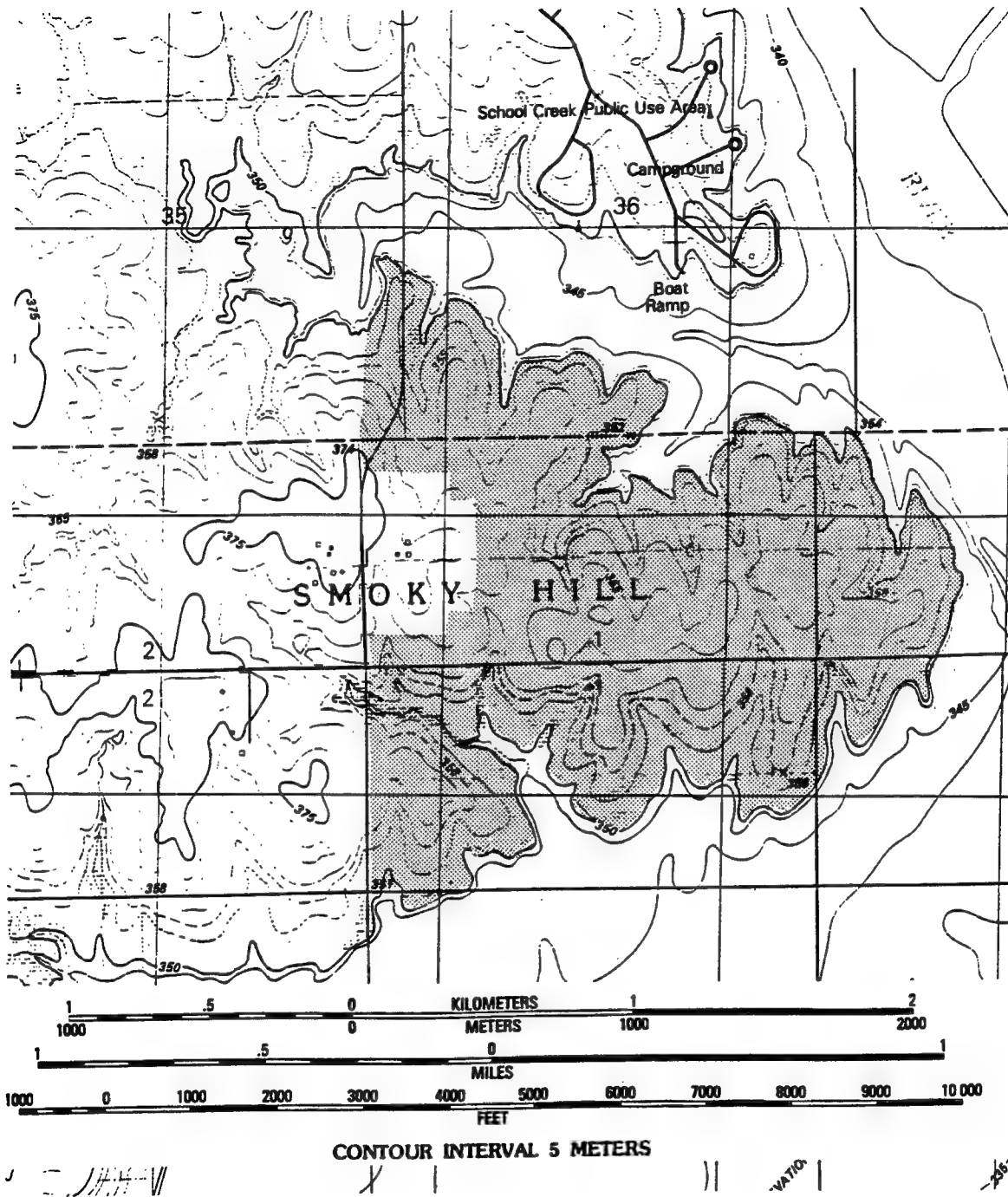


Figure 3: Map of Smoky Hill parcel.

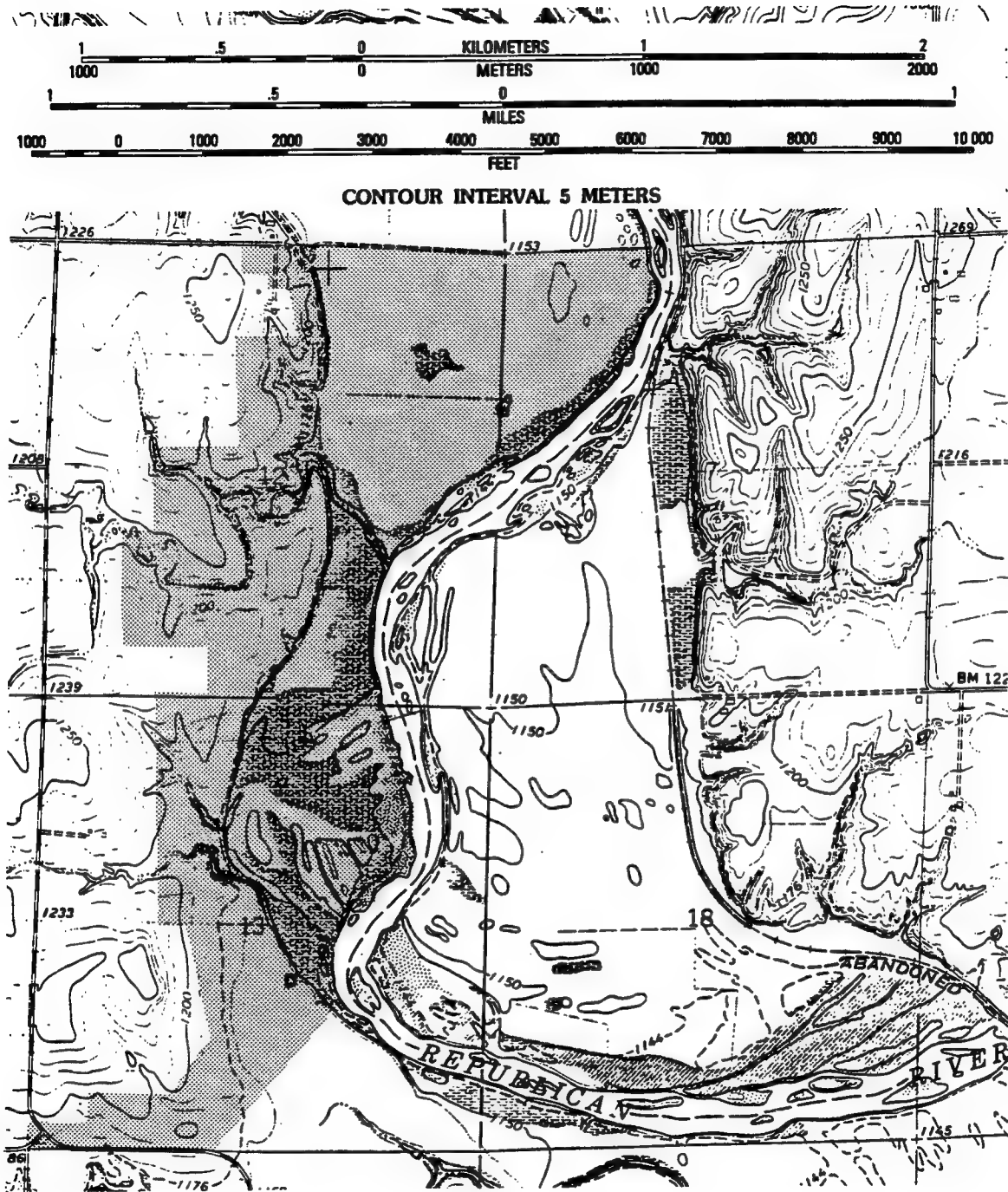


Figure 4: Map of River Bend parcel.

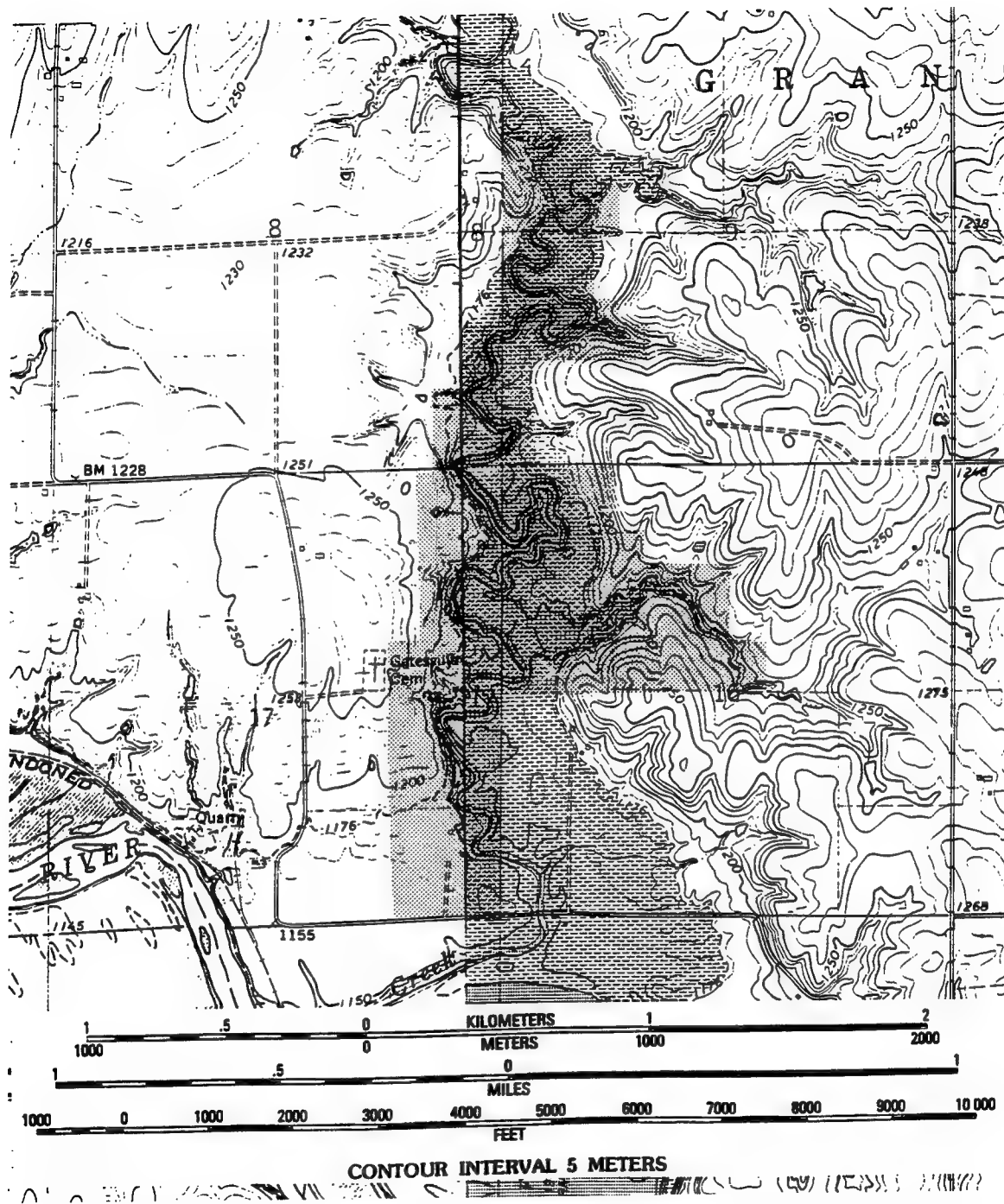


Figure 5: Map of Mall Creek parcel.

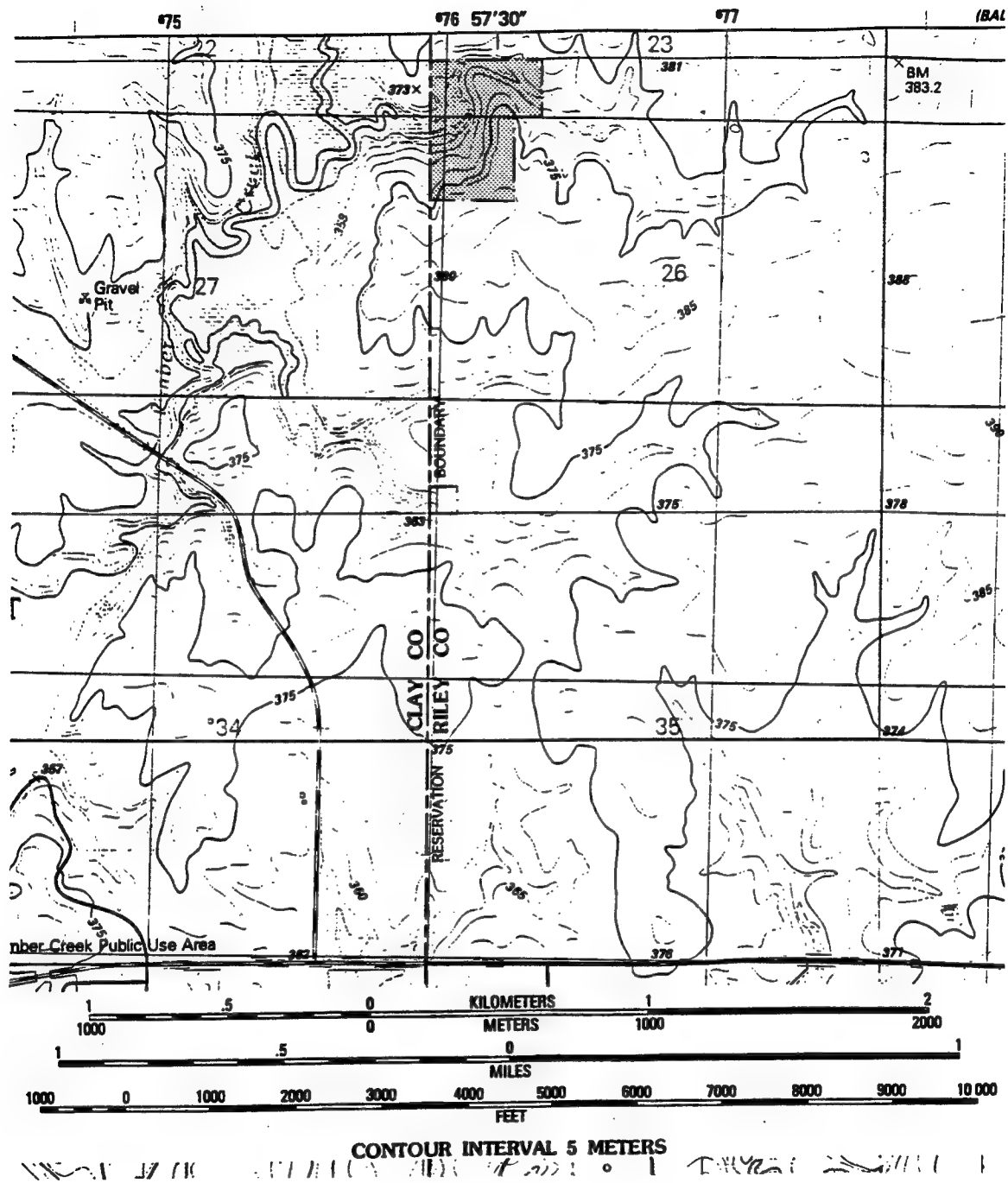


Figure 6: Map of Timber Creek parcel.



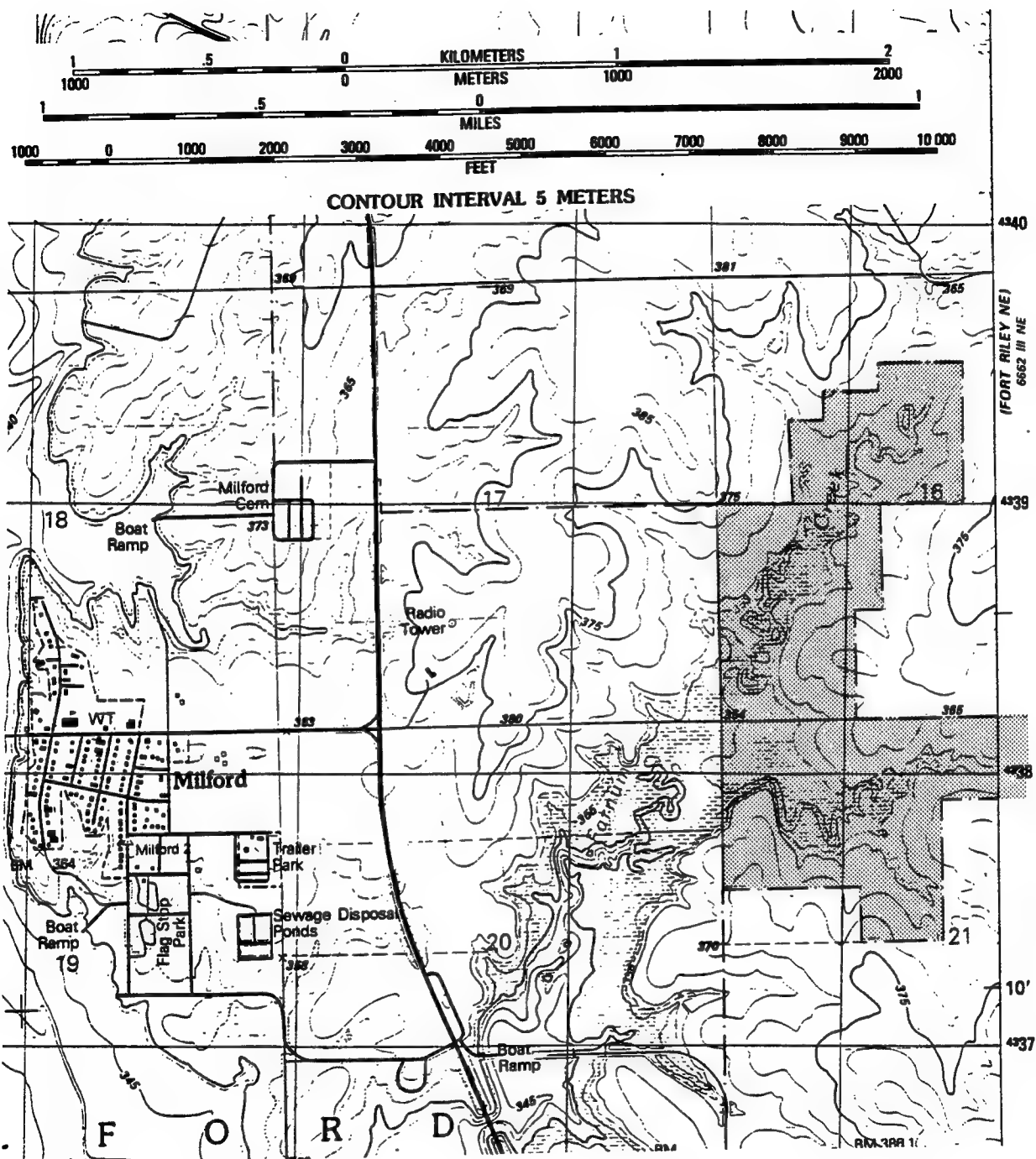


Figure 7: Map of Farnum Creek parcel.

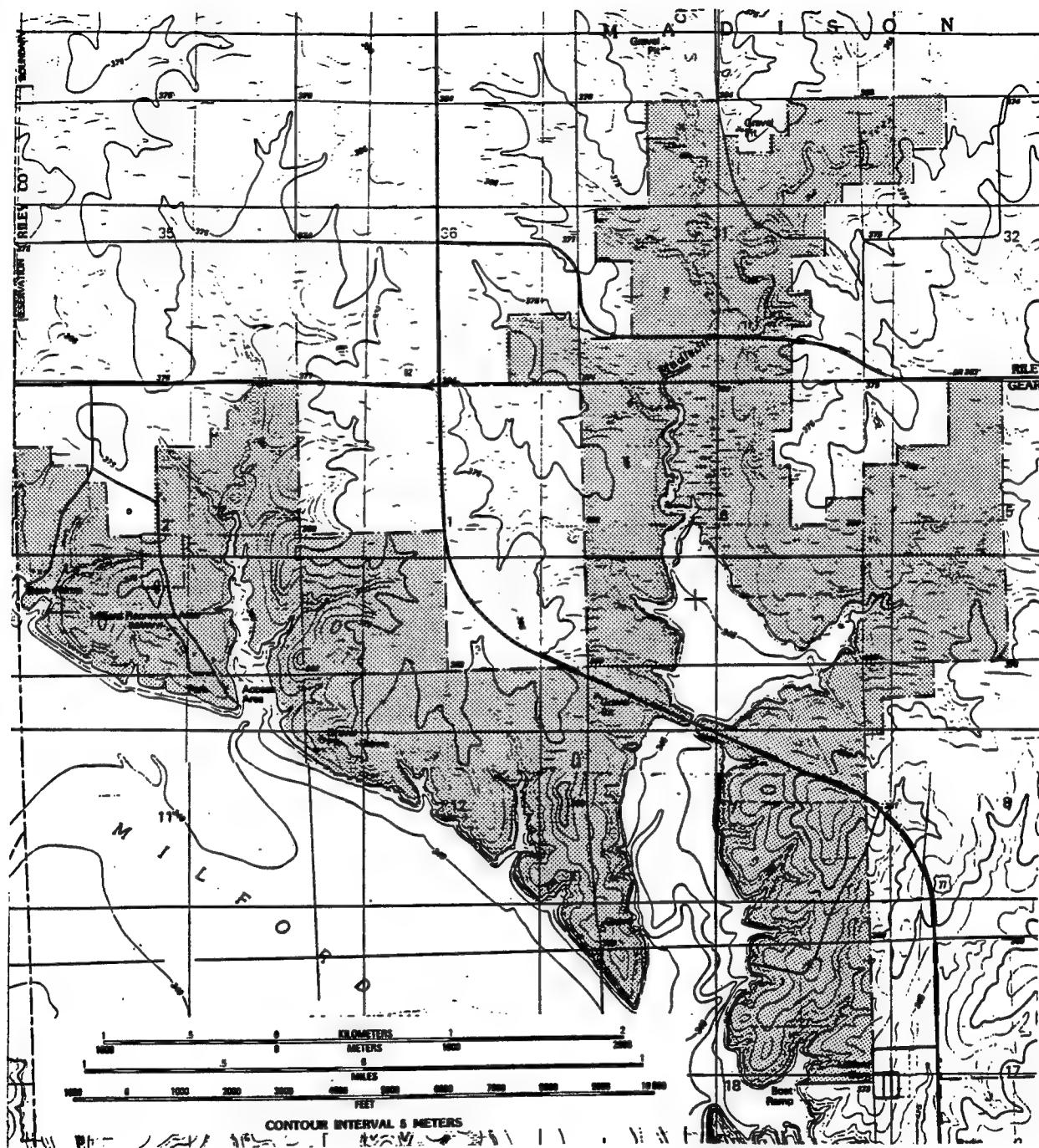


Figure 8: Map of Madison Creek parcel.

## 14GE1130

**Site Name:**

**Field No:** SH1

**Cultural Affiliation:** Late Plains Village

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Permian Limestone

**Drainage:** School Creek

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 100 x 35 m

**Surface Visibility:** 80%

**Slope:** 0-8%

**Ground Cover Vegetation:** Prairie, brush, flood-scoured

**Survey Date:** 21 Sept 1993

**Land Use:** Public use

**Elevation:** 1165 ft amsl

### Site Description and Survey Results:

This site, a lithic scatter, is on a relatively flat bench in the Flint Hills uplands overlooking School Creek, about a mile west of its entering the Republican River valley. About a quarter mile northeast and downslope toward School Creek is site 14GE33 (now under water).

The site area is an abandoned agricultural field, stripped of natural vegetation (e.g. bushes and trees) and exposed to flood erosion. Flood scouring has stripped the soil from the lower parts of the landform, exposing a weathered chert layer above a thin limestone cap near the present waterline. The cultural material is exposed in soil deposits further up the slope. The extensive erosion of the whole area provided extremely good visibility for the pedestrian survey.

The lithic material was found on and beside a dirt track that runs north along the bench towards a small cove providing access to Milford Lake. Most of the artifacts, including the projectile point, were found near the highest part of the track above the south end of the cove.

Along with an intensive pedestrian survey, a series of test holes, 10 meters apart, were done with a 2.5 inch bucket augur in the area of greatest concentration. These holes provided information about the stratigraphy, revealing that the remaining soil extended to a stratum of fragmented chert (see chart below). No cultural material or organic deposits were identified in these tests.

### Cultural Material Collected:

14GE1130-0-1 Side-notched projectile point (1); Washita point (Bell 1958:98), missing distal portion and part of base; Permian Chert

14GE1130-0-2 Retouched flake (1); Bi-directional marginal retouch; Permian Chert

14GE1130-0-3 Discarded preform (1); Permian Chert

14GE1130-0-4 Tertiary flakes (4); Permian chert

Description of 14GE1130-0-1: Side-Notched Projectile Point (see Figure 9):

This specimen is missing the tip and one corner of the base. It has straight sides and a slightly concave base. Notches are formed one quarter to one third along the length of the point from the base.

Notches are oriented towards the basal end. The specimen exhibits very regular characteristics, including: a biconvex transverse cross-section; straight, thin edges centered between the two faces; and parallel flake scars, produced by pressure-flaking, that extend from the edges to meet along the midline of the point. The base is thinned. This point resembles Washita types (Bell 1958:98). It is made from Permian chert.

#### **Observations, Interpretations and Recommendations:**

The site has exposed a limited amount of lithic material over its approximately 3500 square meters.

The presence of the Washita point indicates that the site had, at least, a late Plains Village occupation, presumably focused on resources associated with School Creek. In addition, as most of these artifacts are tools and all are of the local Permian chert, it appears that this place was used for local tool production (especially given the presence of a preform). Given that the site is a former cultivated field severely eroded by the recent floods, the paucity of cultural material suggests that this occupation was short-lived. The lack of ceramics in a Late Plains Village context further supports the idea that this was a short-term campsite.

The site has been subject to a number of culturally-generated impacts: by agriculture (plowing), flood erosion, and rutting from vehicles. Although there was little material recovered over a large and fully exposed eroded surface, most of it came from an area above the active erosion zone, fortuitously exposed in a dirt track used as an unofficial access road to School Creek inlet. As the chert layer exposed through augur testing is clearly below the plow zone and an unknown depth of soil above is undisturbed (the plow zone could not itself be discerned in the tests), it is possible that undisturbed features may exist.

Additional National Register testing of this site is therefore recommended. The location of the site in the uplands on a tributary of the Republican River is pertinent to the settlement-subsistence model developed by Schmitt (1988) for the Milford Lake area (see description and evaluation of Schmitt's model above, Chapter 2, Research Goals, Predictive Model, p. 7). If the occupation can be dated, it will help integrate regional culture history with specific land use patterns, thereby enhancing the predictability of the model.



Figure 9: Washita Projectile Point.

Soil profile: 14GE1130

0 cm  
 SOGN ROCKY CLAY LOAM  
 brownish  
 17  
 chert layer  
 20  
 purplish to reddish  
 brown  
 35

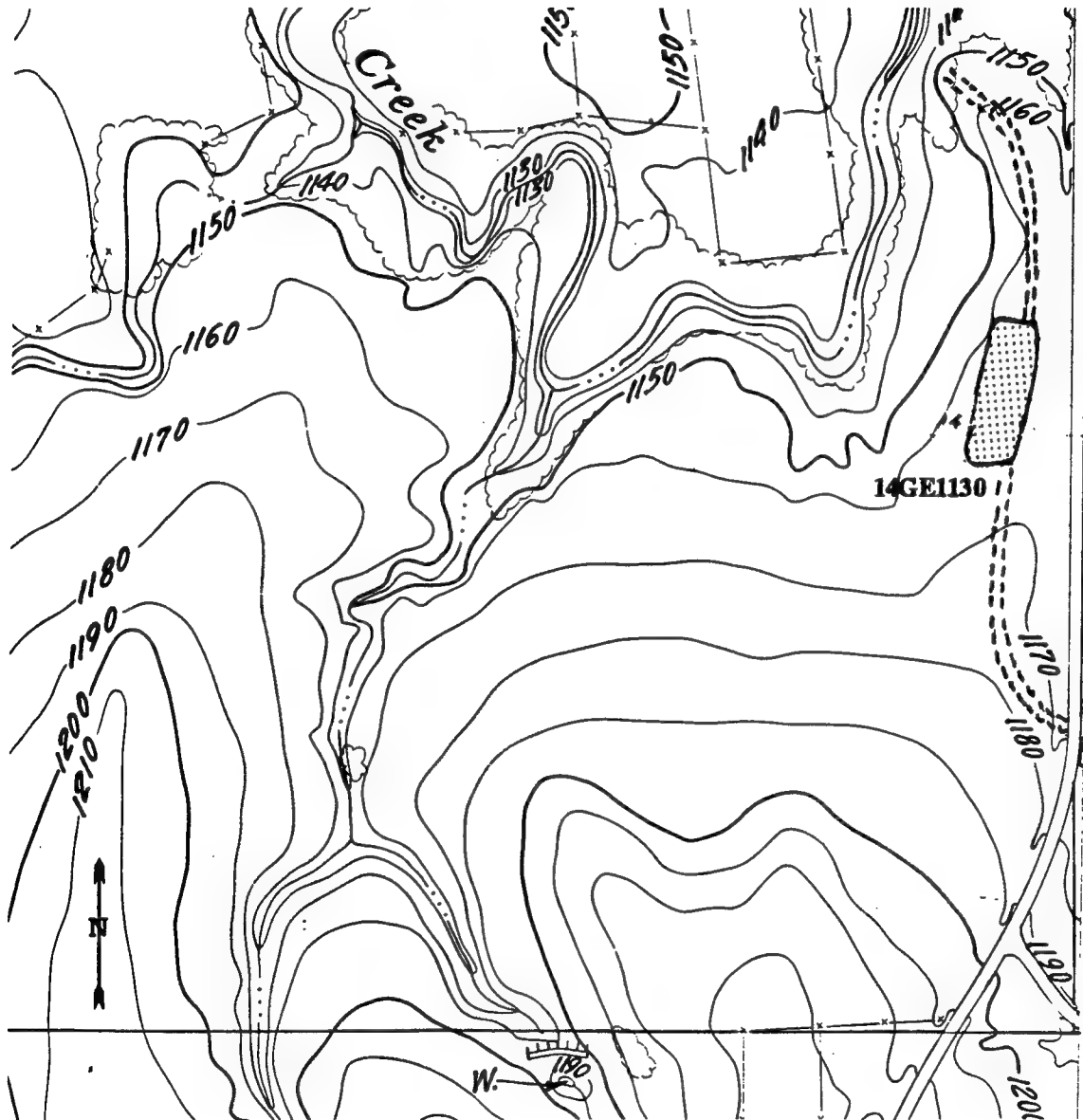


Figure 10: Map of Site 14GE1130 (Scale: 1 inch = 400 feet)

**Site Name:**

**Field No:** SH2

**Cultural Affiliation:** EuroAmerican

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** School Creek

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 1500 sq meters

**Surface Visibility:** 60%

**Slope:** 8-12%

**Ground Cover Vegetation:** Prairie, brush, flood-scoured

**Survey Date:** 21 Sept 1993

**Land Use:** Public use

**Elevation:** 353 m (1158 ft) amsl

**Site Description and Survey Results:**

Site 14GE1132, a foundation wall and farm debris, is in the Flint Hills uplands, overlooking the School Creek drainage to the north. It is located at the end of a dirt road bearing east onto a point of land extending north into Milford Lake. Here a 34 meter row of large cedar trees runs west past a semi-circular limestone foundation. The semi-circular wall is 2 meters in diameter, varies in thickness from 28 to 40 cm, and has a mortar cap which is just above ground level. Across the road to the south, corrugated steel debris which might have been a part of a silo or granary is tangled against trees in the undergrowth. Cultural material was spread over about 1500 sq meters.

Numbered features on the site map are defined as follows:

- 1 - semi-circular structure of limestone with a mortar cap
- 2 - row of cedar trees

**Cultural Material Collected:**

14GE1132-0-1 Glass, jar body fragments (2), opalescent aqua

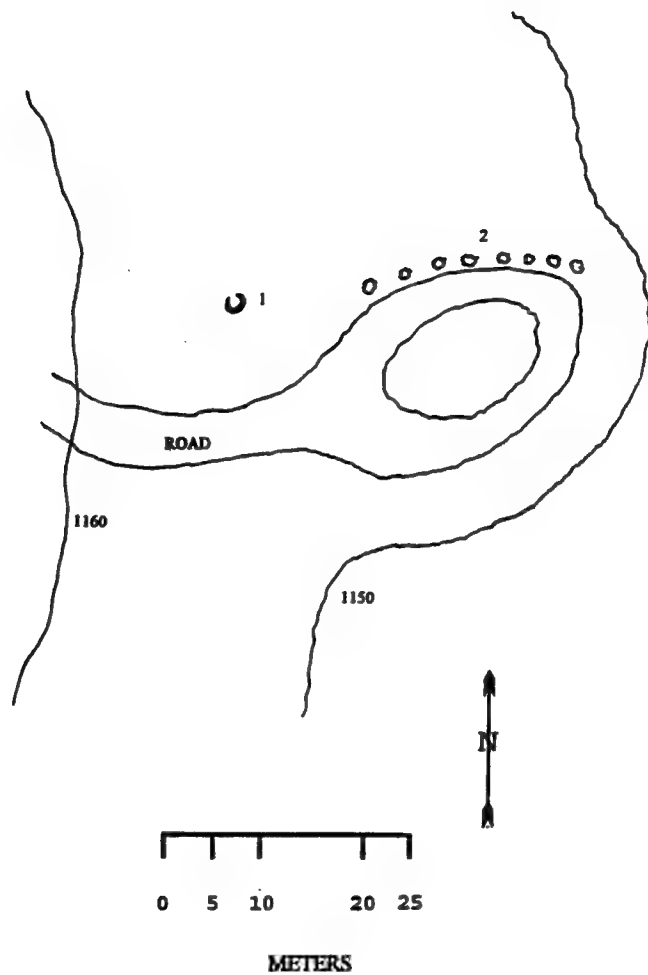
14GE1132-0-1 Glass, jar body or base fragments (1), opalescent aqua (embossed "...H S.../...TION")

**Observations, Interpretations and Recommendations:**

These remains are farm structures associated with a homestead on land patented in 1904 to P. H. Bowers (Table A1). The Milford Reservoir map (US Army Corps of Engineers n.d.: Sheet 11) indicates that in 1959 there were three buildings just east of this site in an area now flooded. The mortar on the silo base appears to be locally made (it is not Portland cement). Glass fragments were too small to provide functional or chronological information.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of

the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).



Numbered features on the map of site 14GE1132 are defined as follows:

- 1 - semi-circular structure of limestone with a mortar cap
- 2 - row of cedar trees

Figure 11: Map of Site 14GE1132

**Site Name:**  
**Field No:** SH4  
**Cultural Affiliation:** Historic  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Permian Limestone  
**Drainage:** Republican River  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** 24 sq meters  
**Surface Visibility:** 10-50%  
**Slope:** 15-30%  
**Ground Cover Vegetation:** Tallgrass prairie  
**Survey Date:** 22 Sept 1993  
**Land Use:** Public use  
**Elevation:** 371 m (1220 ft) amsl

**Site Description and Survey Results:**

This EuroAmerican petroglyph site is located on a heavily eroded limestone outcrop remnant in the Flint Hills uplands, overlooking the Republican River channel in the main part of Milford Lake to the east.

One large and five small limestone boulders lie at the top of a hill which is the highest point of the section (Figure 12). From this vantage point, one can see for miles in all directions. The hill is covered with tall grass; some shrubs grow right around the rocks. All of these boulders bear carvings of names, dates and shapes. A tenant who lived on the section road to the west said this hilltop rock area was known locally as 'Indian Lookout'.

Each of the rocks was carefully examined for petroglyphs. The most effective enhancement method was used, namely scanning the rock with a raking light at dusk. The light and shadow produced on the surface revealed all surface indentations, natural and cultural. The petroglyphs were then recorded by placing mylar over the surface and tracing the images directly with black drawing ink.

Shovel tests were attempted around the rocks, but proved impossible, as the subsurface consists of limestone rubble. Shovel tests on the lower slopes and base of the hill proved negative.



The following petroglyphs were recorded:

(?) = Hypothetical \* = Indistinct

Area 1	Area 2	Area 3	Area 4	Area 6	Area 9
1. RU	1. RD LR	1. G.C.	1. OR. (?)	1. MF	1. V
2. CE	2. 1 DUTY (?)	1987	2. KCS	19**	2. EC
3. FC	3. FORD	2. 1909	3. HEA	2. A. W ill	3. GC
4. W.A.	1917	RLO- R.S.	4. I HALEY		APRIL. *
5. S L D	4. 1919	3. M C (?)	11	Area 7	
1776	5. W * W	1878	5. T	1. OVN (?)	Area 10
	6. LW		6. K	2. LW	1. F.A. 1902
	7. J		7. 1919 IAN A		
	8. RS		KCS 191	Area 8	Area 11
	9. J.A.			1. C H 1891	1. KPR
	10. B.W.		Area 5		2. F
	11. LOVE		1. F (?)		
	K.C.S.				
	1921				

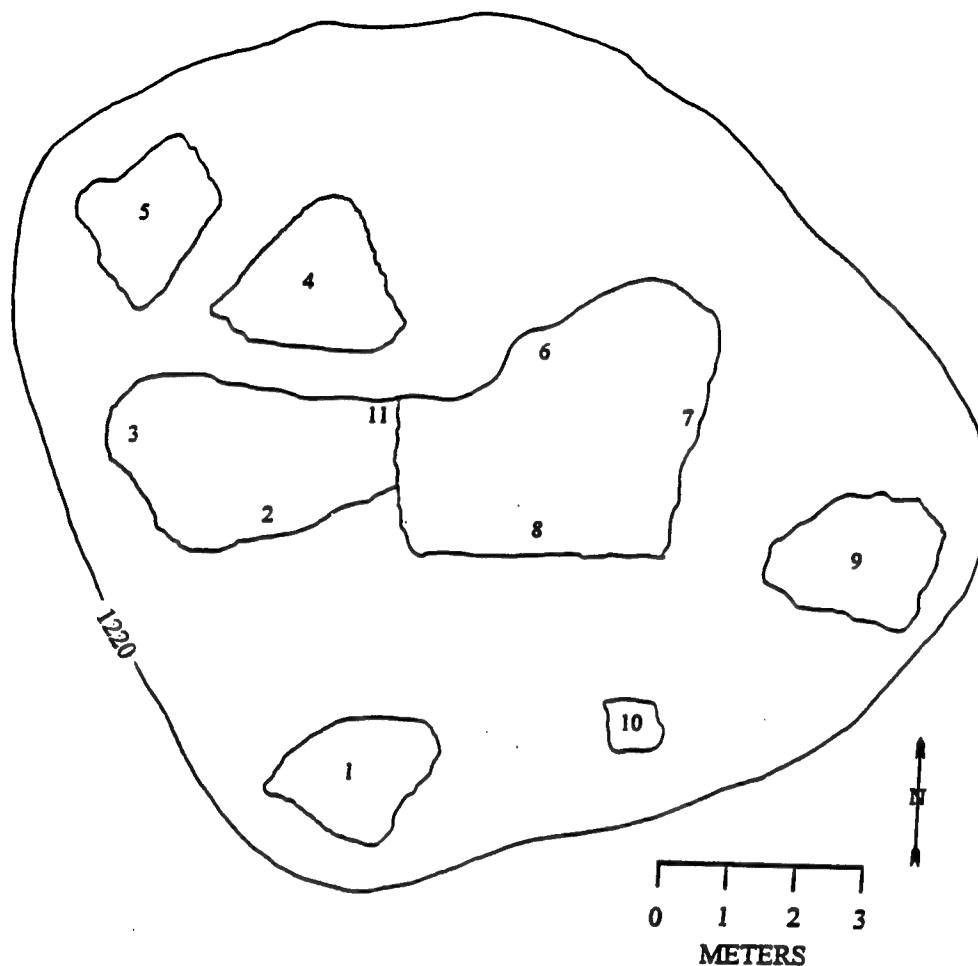
### Interpretation, Evaluation and Recommendations:

Two factors account for the petroglyphs here: the site is the highest point in the peninsula and it contains a group of large, limestone rocks - an unusual feature in the area. Although no aboriginal art was found here, it is possible that the site was used as a lookout by Indian people.

The name and initial petroglyphs are probably those of inhabitants of the region. The O.R. on area 4 could be Orrin S. Russell who acquired the patent for this land which he recorded in 1882. Between 1883 and 1892 most of sections 1 and 6 were acquired by August Roediger whose family remained in the area into the 1930s. They could account for other R initials. A number of the initials end in S, J, or A. After Roediger, Schweitzers owned much of the land until it was expropriated by the Federal Government (Table A2). According to the 1909 Geary County Atlas, B. Johnson, Cyrus Acker, George Acker, and Sam Acker worked the land surrounding this site.

The date petroglyphs span a time period from the late 19th century to the present. There is one exception: one petroglyph appears to date from the late 18th century. There is no way to determine whether this date is authentic. The initials attached to it are presently being researched - although it is clearly difficult to ascribe a name to a set of initials.

As the majority of petroglyphs are initials and so, difficult to connect with specific individuals, and as it is not possible to confirm the authenticity of the putative 18th century petroglyph, it is not possible at this time to confirm the degree of significance of this site in relation to National Register criteria. It is therefore recommended that further National Register testing be done - in the form of additional archival research on the material from this site - particularly the '18th century' petroglyph - and that a more extensive graphic and photographic recording be conducted. The latter recommendation is made in recognition of the fragility of petroglyph sites to weathering and defacement by visitors and in view of the fact that this area is designated for public use.



(?) = Hypothetical

● = Indistinct

**Area 1**

1. RU
2. CE
3. FC
4. W.A.
5. S L D 1776

**Area 2**

1. RD LR
2. I DUTY (?)
3. FORD 1917
4. 1919
5. W ● W
6. LW
7. J
8. RS
9. J.A.
10. B.W.
11. LOVE K.C.S. 1921

**Area 3**

1. G.C. 1987
2. 1909 RLO- R.S.
3. M C (?) 1878

**Area 4**

1. OR. (?)
2. KCS
3. HEA
4. I HALEY 11
5. T
6. K
7. 1919 IAN A KCS 191

**Area 5**

1. F (?)

**Area 6**

1. MF 1900
2. A. Will

**Area 7**

1. OVN (?)
2. LW

**Area 8**

1. CH 1891

**Area 9**

1. V
2. EC
3. GC APRIL ●

**Area 10**

1. F.A. 1902

**Area 11**

1. KPR
2. F

Figure 12: Map of Site 14GE1134

## 14GE1131

**Site Name:**

**Field No:** SH6

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 40 x 160 m

**Surface Visibility:** 80%

**Slope:** 4-8%

**Ground Cover Vegetation:** Tallgrass prairie, flood-scoured

**Survey Date:** 23 Sept 1993

**Land Use:** Public use

**Elevation:** 353 m (1158 ft) amsl

### Site Description and Survey Results:

This lithic scatter is located in the Flint Hill uplands, on a relatively gentle slope that is now a spit of land near the mouth of School Creek. Nine sites are located nearby: 14GE33, 14GE30, 14GE1130 and 14GE1135; sites 14GE45, 14GE44, 14GE131, 14GE43, and 14GE42 border the Smoky Hill peninsula at or below the water line of Milford Lake. The large historic village site 14GE1 is near the tip of this peninsula.

The sandy surface of the spit, a formerly cultivated field stripped of natural vegetation, has been lightly scoured by the flood, but the shoreline has been heavily eroded by wave action. As these impacts provided high surface visibility, the pedestrian survey recovered a relatively large amount of cultural material. Evidence indicated that flakes and cores were distributed across a wide area but concentrated more heavily near the north shoreline and toward the tip.

The shoreline banks provided a clear view of the subsurface in the area of artifact concentration; in addition, surveyors conducted shovel tests in the central area of the spit. Each of these tests revealed a stratigraphy similar to that of the shoreline exposures, with no evidence of cultural material or other evidence of occupation.

Material was mapped on a grid (Figure 13A).

### Cultural Material Collected:

14GE1131-0-1 Core (1); Permian chert

14GE1131-0-2 Retouched secondary flakes (2); Marginal retouch on distal end; Permian chert

14GE1131-0-3 Secondary flakes (12); Permian chert

14GE1131-0-4 Tertiary flakes (24); Permian chert

14GE1131-0-5 Tertiary flake (1); Quartz

14GE1131-0-6 Shatter (4); Permian chert

14GE1131-1-1 Tertiary flakes (2); Permian chert

14GE1131-1-2 Shatter (2); Permian chert

14GE1131-2-1 Tertiary flakes (5); Permian chert

14GE1131-2-2 Tertiary flake (1); Basalt/Trachite

14GE1131-3-1 Secondary flake (1); Permian chert  
14GE1131-3-2 Tertiary flakes (4); Permian chert  
14GE1131-3-3 Tertiary flake (1); Smoky Hill Jasper  
14GE1131-3-4 Shatter (1); Permian chert  
14GE1131-4-1 Secondary flakes (4); Permian chert  
14GE1131-4-2 Tertiary flakes (23); Permian chert  
14GE1131-4-3 Shatter (8); Permian chert  
14GE1131-5-1 Secondary flakes (6); Permian chert  
14GE1131-5-2 Tertiary flakes (23); Permian chert  
14GE1131-5-3 Tertiary flake (1); Dark blue-gray Permian chert  
14GE1131-5-4 Tertiary flake (1); Heat-treated Permian chert  
14GE1131-5-5 Shatter (2); Permian chert

#### **Observations, Interpretations and Recommendations:**

The site is located near the confluence of School Creek and the Republican River on a relatively flat, well-drained surface, suggesting that it was an occupation site focused on the food and lithic resources of the two valleys. Although there was a considerable amount of lithic material scattered over the spit, there was no evidence of introduced rock, such as that used for hearths, on the site. In addition, the well-exposed cutbanks and shovel tests showed no concentrations of organic matter. It is likely, therefore, that this site was only intermittently used by local people, who made tools from cores of Permian chert collected locally.

The lack of occupational debris, absence of visible subsurface deposits, and general loss of site integrity due to agriculture and flood erosion suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14GE1131

----- 0 cm  
HASTINGS SILTY CLAY LOAM,  
4-8% SLOPES  
A Horizon  
----- 25

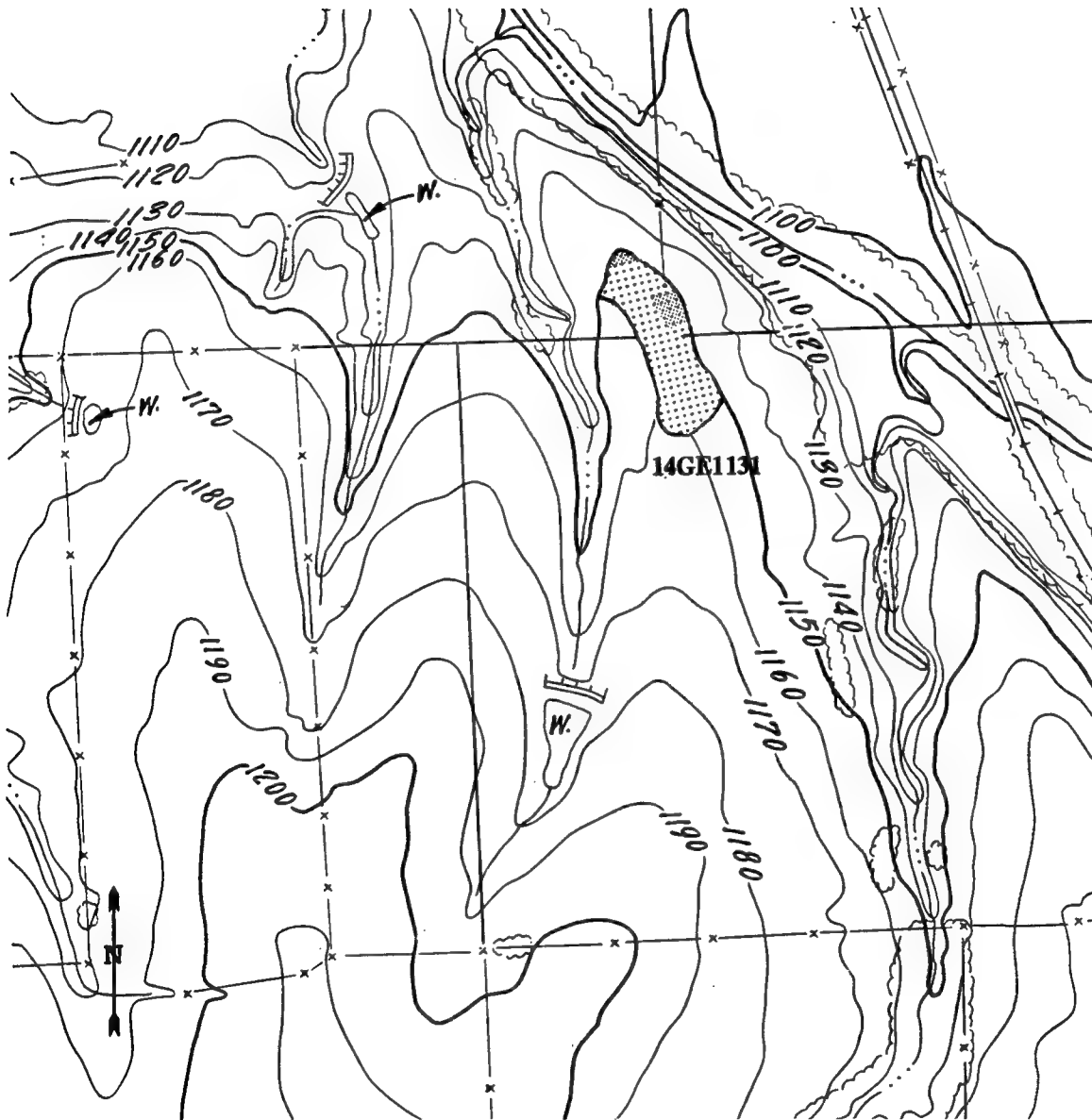


Figure 13: Map of Site 14GE1131 (Scale: 1 inch = 400 feet)

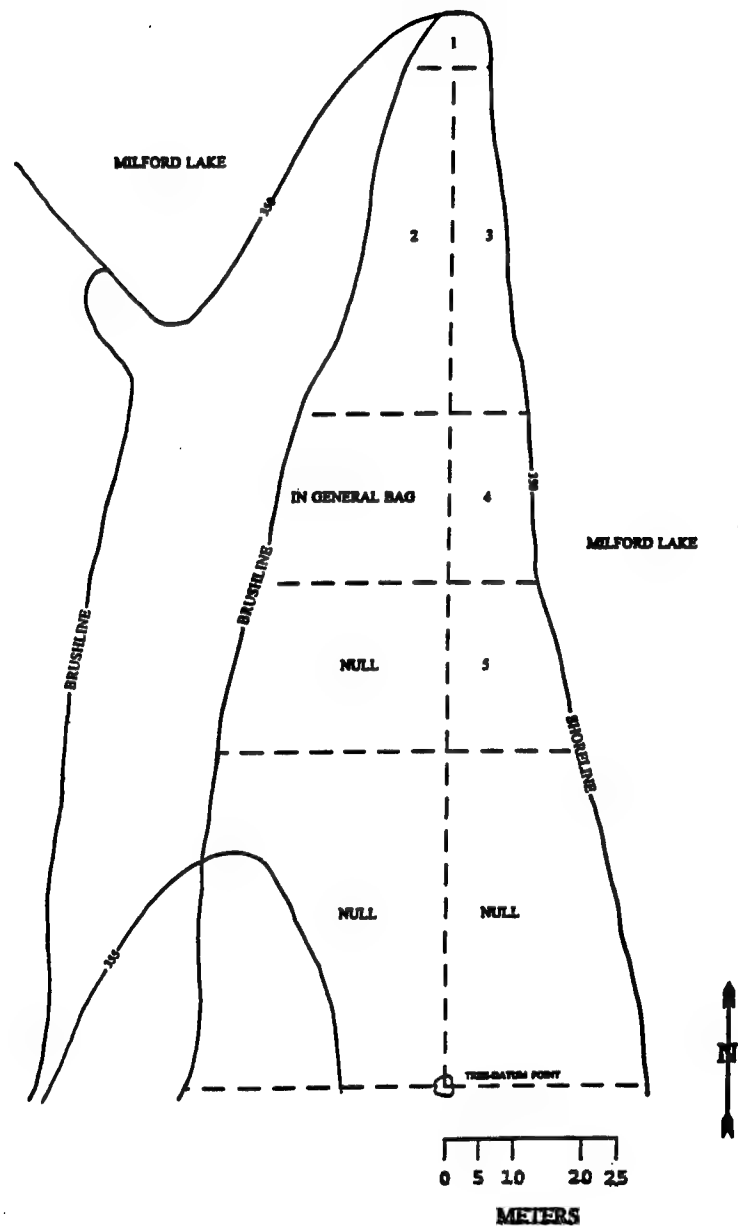


Figure 13A: Closeup of Site 14GE1131 showing collection grid

## 14GE1133

**Site Name:**

**Field No:** SH7

**Cultural Affiliation:** EuroAmerican

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Permian Limestone

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 50 x 25 m

**Surface Visibility:** 70%

**Slope:** 8-30%

**Ground Cover Vegetation:** Prairie, flood-scoured

**Survey Date:** 23 Sept 1993

**Land Use:** Public use

**Elevation:** 349 m (1145 ft) amsl

### Site Description and Survey Results:

This site, an historic refuse dump, is located in the Flint Hills uplands now overlooking Milford Lake. The artifacts are scattered along a sandy draw that runs down to the shoreline; most were found in beach sand. They range in date from the late 19th to mid-20th century. There was no evidence of structures. Site 14GE1173 is nearby.

### Cultural Material Collected:

- 14GE1133-0-1 Ceramic: Porcelain body sherds, white with blue hand painted designs
- 14GE1133-0-2 Ceramic: Porcelain figurine or vase base, white with handpainted blue scallop edge & faint red crisscross design
- 14GE1133-0-3 Ceramic: Porcelain doll hair fragment, white with lt brown paint
- 14GE1133-0-4 Ceramic: Semi-porcelain child's dish rim-to-base, white with handpainted squirrel eating an acorn
- 14GE1133-0-5 Ceramic: Ironstone, rim, embossed angular trim, white
- 14GE1133-0-6 Ceramic: Stoneware rim, green
- 14GE1133-0-7 Ceramic: Stoneware rim, ridged, blue (mixing bowl?)
- 14GE1133-0-8 Ceramic: Ironstone base, white (corner of crown maker's mark)
- 14GE1133-0-9 Ceramic: Ironstone plate base, white
- 14GE1133-0-10 Ceramic: Ironstone serving bowl base, white, maker's mark lion & unicorn flanking shield over "CHARLES MEAKIN/HANLEY/ENGLAND"
- 14GE1133-0-11 Ceramic: Ironstone base. yellow-cream
- 14GE1133-0-12 Ceramic Earthenware body sherd, russet, glazed
- 14GE1133-0-13 Ceramic: Stoneware body sherds, 1 beige, 1 gray, 6 brown, 1 brown & gray
- 14GE1133-0-14 Ceramic: Earthenware drainage tile with grooves forming a chevron
- 14GE1133-0-15 Glass: Complete tonic bottle, base embossed "6" or "9"
- 14GE1133-0-16 Glass: Bottle stopper with dimple on top, amethyst
- 14GE1133-0-17 Glass: Canning jar dome lid, yellowed
- 14GE1133-0-18 Glass: Bottle neck, hand applied lip bead, green tint
- 14GE1133-0-19 Glass: Canning jar rim, aqua
- 14GE1133-0-20 Glass: Bottle neck & rim fragment, applied rim, clear
- 14GE1133-0-21 Glass: Flat glass rim, cloudy

- 14GE1133-0-22 Glass: Bottle base, flat side wall embossed "ON..." between 2 ridges, clear
- 14GE1133-0-23 Glass: Bottle base, rectangular with rounded corners, clear opalescent, embossed with "6" O in a square "4" (mfg Owens Bottle Co 1918 to 1929)
- 14GE1133-0-24 Glass: Bottle base fragment, thick, brown, embossed with dots
- 14GE1133-0-25 Glass: Bottle base fragment, thick, light blue
- 14GE1133-0-26 Glass: Bottle base fragment, amethyst, 2.3 in OD
- 14GE1133-0-27 Glass: Bottle base/wall fragment, rectangular, lt. amethyst
- 14GE1133-0-28 Glass: Bottle base fragment, round, lt. amethyst, "ONE FUL..." outer edge & a diamond surrounding a "7" in the center
- 14GE1133-0-29 Glass: Bottle base/wall fragment, clear, wall embossed "...32 o..."
- 14GE1133-0-30 Glass: Bottle base fragment, amethyst
- 14GE1133-0-31 Glass: Base/wall fragment, white, scalloped scale-like design on wall exterior
- 14GE1133-0-32 Glass: Bottle base fragment with push-up, green-brown
- 14GE1133-0-33 Glass: Base fragment, cloudy clear, embossed with sunburst
- 14GE1133-0-34 Glass: Body shard, clear, embossed "...ER../..CT M.."
- 14GE1133-0-35 Glass: Body shard, clear, embossed "...O../...RS /...MO."
- 14GE1133-0-36 Glass: Body shards, cloudy/opalescent amethyst
- 14GE1133-0-37 Glass: Body shard, drinking glass, amethyst, etched vertical grooves
- 14GE1133-0-38 Glass: Body shards, amethyst
- 14GE1133-0-39 Glass: Body shards, lt. green
- 14GE1133-0-40 Glass: Flat, lt. green cloudy

#### **Observations, Interpretations and Recommendations:**

This site is a refuse dump above a farm now submerged under Milford Lake. According to county records, this farmstead was occupied between 1885 and 1962 (Table A19). Although most of the artifacts have wear from beach tumbling, some of them give clues to the time of their manufacture. The makers mark on the ironstone serving bowl base 14GE1133-0-9 was used by Charles Meakin on pottery between 1883 and 1889 (Godden 1964:426). Applied lips such as 14GE1133-0-18 & 20 were common on bottles made between 1840 and 1920 (Rock 1981:8). The numerous pieces of amethyst glass come from bottles made between 1880 and 1916. During these years glass was made clear by adding manganese dioxide as a decolorizer. Exposure to the sun turned such glass amethyst (Rock 1981:17). The yellowed canning jar lid 14GE1133-0-17 was probably made during World War I when manganese could no longer be obtained from Germany; American glassmakers used selenium to make clear glass which often turns amber with age (Rock 1981:17). The bottle base 14GE1133-0-23 was identified as a bottle made by the Owens Bottle Co., Charleston, W. Va. probably in 1922 (Toulouse 1971: 393-397). These artifact clues indicate it is extremely likely that this material all derives from this farmstead and that the dump itself dates from the late 19th to mid-20th century.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).



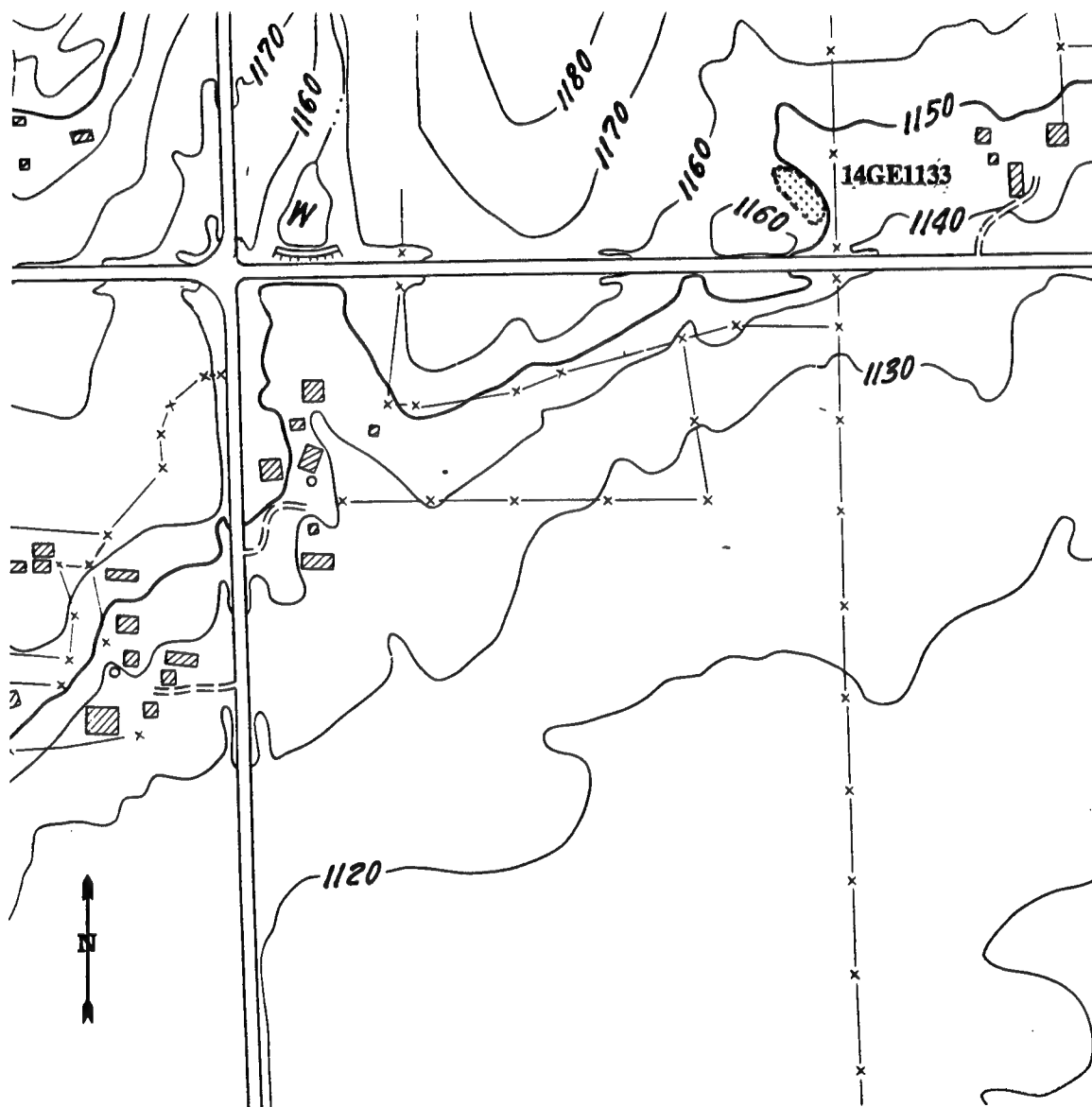


Figure 14: Map of Site 14GE1133

**Site Name:**  
**Field No:** SH8  
**Cultural Affiliation:** EuroAmerican  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Permian Limestone  
**Drainage:** Republican  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** 35 x 40 m  
**Surface Visibility:** 70%  
**Slope:** 0-8%  
**Ground Cover Vegetation:** Flood-scoured prairie  
**Survey Date:** 22 Sept 1993  
**Land Use:** Public use  
**Elevation:** 351 m (1156 ft) amsl

**Site Description and Survey Results:**

This site, a rectangular concrete foundation, is located near the shore of Milford Lake. In the northwest corner, there is a small enclosed section with a concrete floor and structural bolts protruding around the edge. Northeast of this foundation is a fragmented cement floor, which was probably a silo or granary base. Site 14GE1133 is nearby.

Numbered features on the site map are defined as follows:

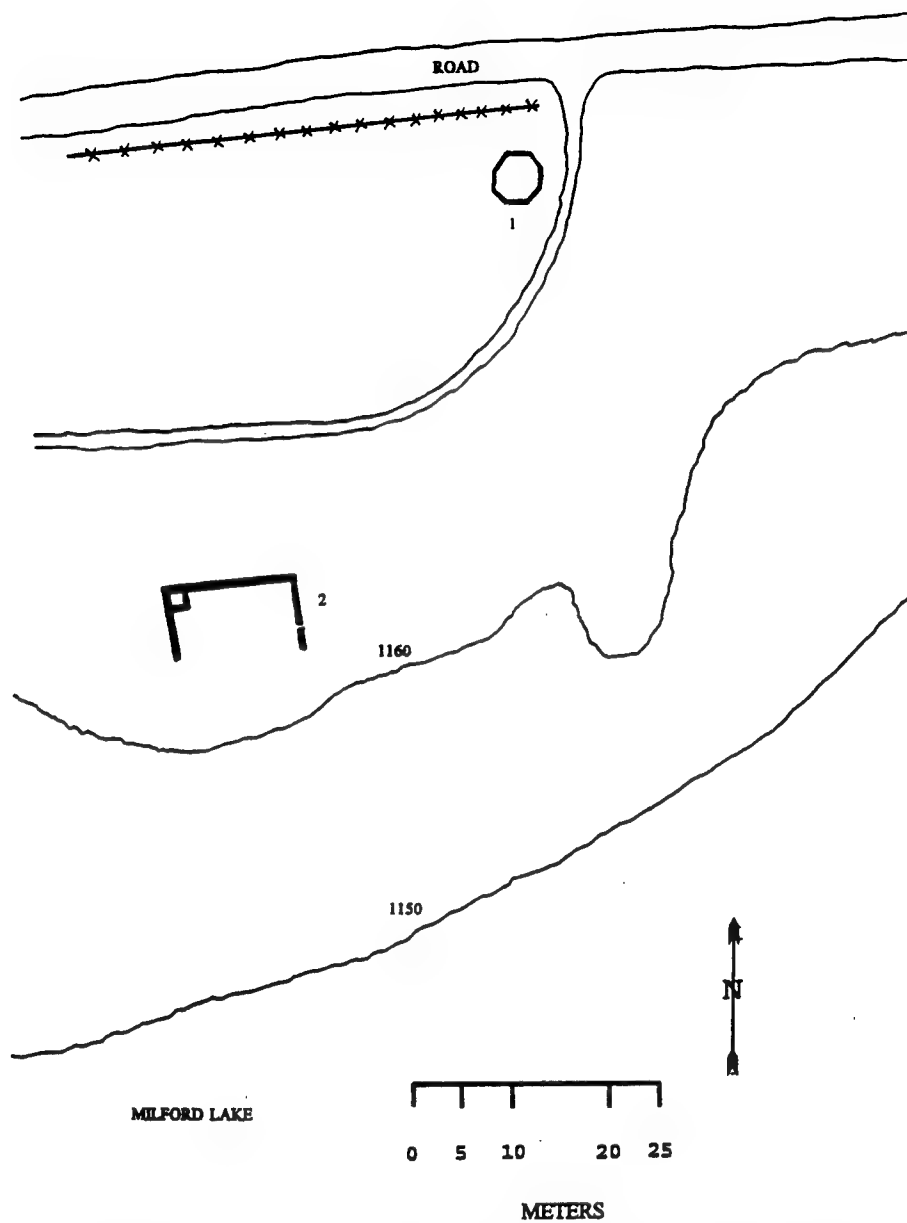
- 1 - concrete silo base
- 2 - concrete foundation

No cultural material was observed or collected.

**Observations, Interpretations and Recommendations:**

The rectangular foundation was probably a barn (possibly a pole barn because of the open side to the south) next to a silo or granary. These structures were part of a farmstead built southwest of the site (and now under water) sometime after the patent date for the land, 1877, and occupied until 1962. The Atlas of Geary County of 1909 names Sam Acker as the occupant. County records indicate that it was owned by Christine Facklam and husband from 1928 to 1962. The foundation material observed is consistent with building techniques of the first half of this century.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).



Numbered features on the map of site 14GE1173 are defined as follows:

- 1 - concrete silo base
- 2 - concrete foundation

Figure 15: Map of Site 14GE1173

**Site Name:**  
**Field No:** SH9  
**Cultural Affiliation:** Prehistoric  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Loess  
**Drainage:** Republican River  
**Recording Agency:** O'Brien 1976  
**Site Size:** Undetermined  
**Surface Visibility:** 20-50%  
**Slope:** 4-8%  
**Ground Cover Vegetation:** Flood-scoured prairie  
**Survey Date:** 23 Sept 1993  
**Land Use:** Public use  
**Elevation:** 353 m (1158 ft) amsl

#### **Site Description and Survey Results:**

Surveyors recovered one flake from the surface at this previously recorded prehistoric site, located in the Flint Hill uplands on a spit of land near the mouth of School Creek. The area has been heavily eroded by the recent floods. In 1976, O'Brien (1978) found a biface fragment and side scraper here. Shovel tests and a detailed examination of nearby shoreline exposures revealed no subsurface deposits.

Numerous prehistoric sites are located in the vicinity. Site 14GE1130 is one mile west and 14GE1135 0.75 miles southeast and there are several sites around the eastern end of the Smoky Hill peninsula: sites 14GE44, 14GE131, 14GE43, and 14GE42. Site 14GE33 is about one mile northwest and 14GE30 about 0.5 miles north across School Creek. The large historic village site 14GE1 is near the tip of this peninsula well protected by dense growth.

#### **Cultural Material Collected:**

14GE45-0-1 Retouched secondary flake (1); Limited marginal retouch; Permian chert

#### **Observations, Interpretations and Recommendations:**

The revisit confirmed the continuing existence of the site, in spite of shoreline erosion caused by the flooding. The dearth of artifacts or other evidence of occupation suggest that the locality may represent a skinning or butchering area where some tool retouch or repair was also done.

The lack of material, absence of subsurface deposits and general loss of site integrity due to agriculture and flood erosion suggests that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

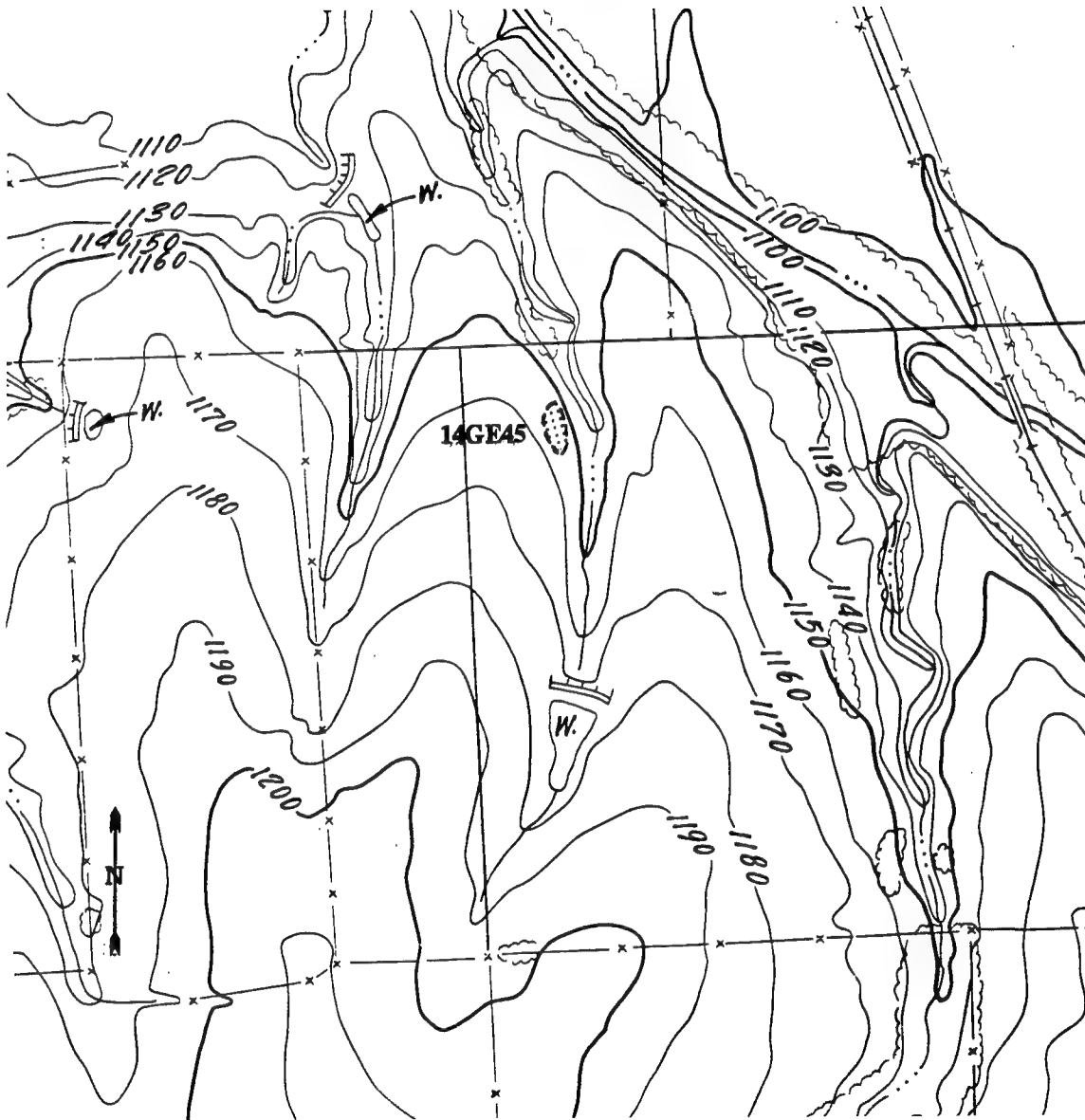


Figure 16: Map of Site 14GE45 (Scale: 1 inch = 400 feet)

## 14GE131

**Site Name:**

**Field No:** SH10

**Cultural Affiliation:** Plains Woodland

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** Sperry 1965

**Site Size:** Undetermined

**Surface Visibility:** 60%

**Slope:** 4-8%

**Ground Cover Vegetation:** Tallgrass prairie

**Survey Date:** 23 Sept 1993

**Land Use:** Public use

**Elevation:** 353 m (1158 ft) amsl

**Site Description and Survey Results:**

This previously recorded concentration of stone tools and flakes is located in the Flint Hill uplands on the northeast flank of Smoky Hill peninsula at the Milford Lake shoreline.

Most of the material was in the slump falling into Milford Lake at the bluff line. A few large flakes came from the bluff top surface.

The entire area has been severely damaged by the recent flooding. High water waves have washed out at least 10 meters in some places. The bank is now unstable and will undoubtedly continue to erode during times of high water.

Shovel tests and the abundant exposure of the subsurface along the shore revealed no evidence of subsurface deposits.

Numerous prehistoric sites are located in the vicinity. Site 14GE1130 is 1.5 miles northwest and 14GE1135 0.75 miles southwest and there are several sites around the eastern end of the Smoky Hill peninsula: sites 14GE44, 14GE131, 14GE43, and 14GE42. Site 14GE33 is about 1.25 miles northwest and 14GE30 about 0.75 miles north across School Creek. The large historic village site 14GE1 is near the tip of this peninsula well protected by dense growth.

14GE131 was originally located and tested by University of Nebraska personnel in 1965 (O'Brien 1976). Most of the material recovered then was identified as Schultz focus Woodland.

**Cultural Material Collected:**

14GE131-0-1 Bifacial tool (1); Possible discarded preform; Permian Chert

14GE131-0-2 Scraper (1); Permian chert (1)

14GE131-0-3 Bifacial tool (1); Possible knife/core; Permian chert

14GE131-0-4 Utilized flakes (2); Permian chert

14GE131-0-5 Secondary flakes (2); Permian chert

14GE131-0-6 Tertiary flakes (6); Permian chert

14GE131-0-7 Concretions (2)

### **Observations, Interpretations and Recommendations:**

The site produced some artifacts, but they were widely scattered along the bluff and, given the extensive areas of exposure, the density was very small. In addition, there was no introduced rock or other evidence associated with extended occupation. It is likely, therefore, that the site was a temporary campsite or processing site, part of a scatter of occupation along the Smoky Hill blufftop.

These survey results suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing). It is recommended, however, that in view of the active erosion of the bank, and the possibility that further erosion will damage or destroy cultural materials still buried in the site area, the area should be monitored by Corps staff at Milford Lake.

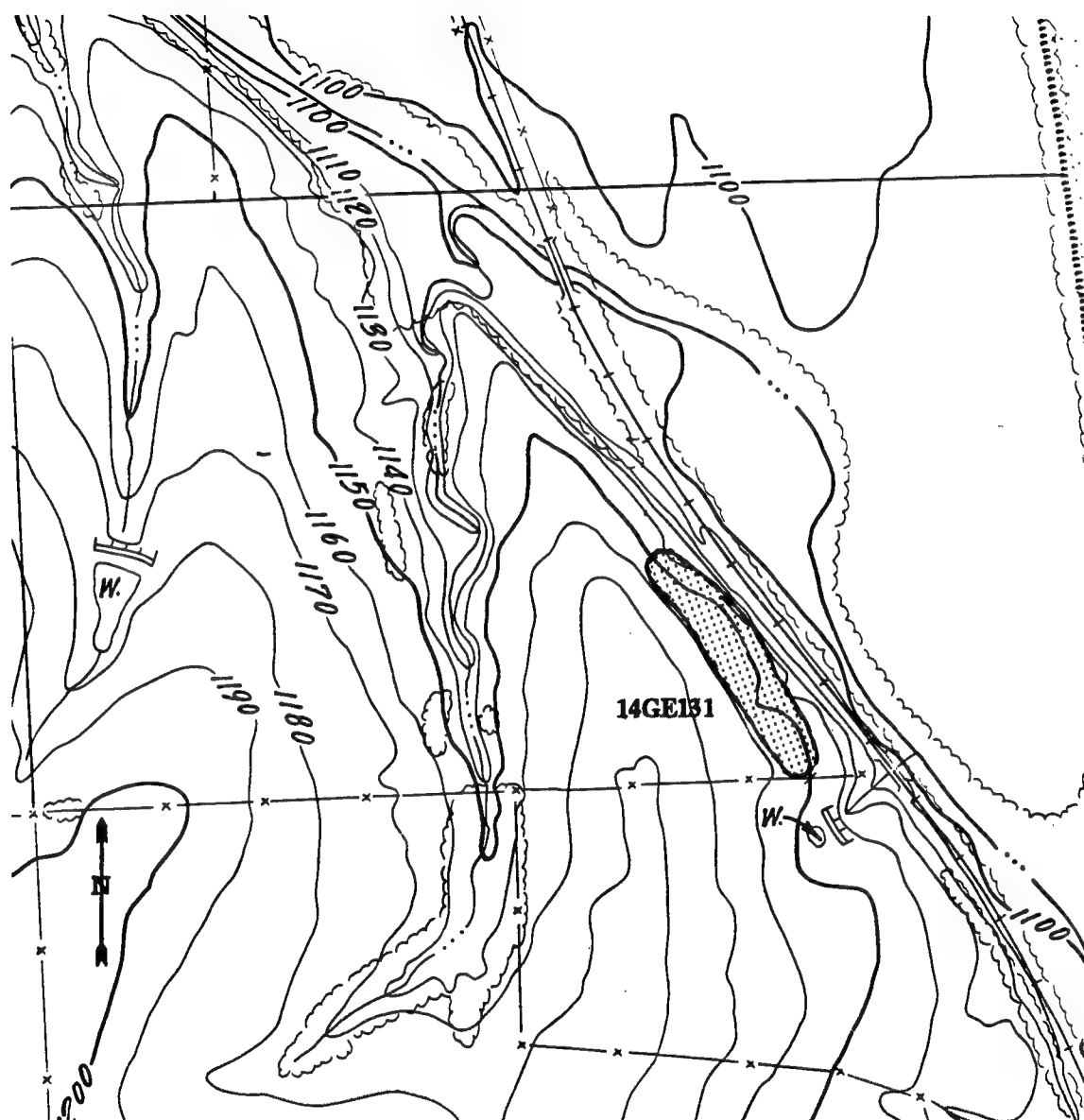


Figure 17: Map of Site 14GE131 (Scale: 1 inch = 400 feet)



## 14GE42

**Site Name:**

**Field No:** SH11

**Cultural Affiliation:** Archaic

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** O'Brien 1976

**Site Size:** Undetermined

**Surface Visibility:** 40%

**Slope:** 4-8%

**Ground Cover Vegetation:** Grass, thickets, flood-scoured

**Survey Date:** 24 Sept 1993

**Land Use:** Public use

**Elevation:** 350 m (1148 ft) amsl

**Site Description and Survey Results:**

This previously recorded site, a small, narrow spit projecting southward into Milford Lake, is part of the Flint Hill uplands on the northeast flank of the Smoky Hill peninsula. Surveyors found only a single flake. As the erosion of the banks of this narrow point was severe and the surface deeply flood-scoured, extensive shovel testing was not necessary to assess the nature of the subsurface.

Sites nearby are 14GE1130 and 14GE1135; and numerous sites are located near the shoreline around the eastern end of this peninsula: sites 14GE45, 14GE44, 14GE131, and 14GE43. The large historic village site 14GE1 is to the north near the tip of the peninsula.

14GE42 was identified in the 1976 O'Brien survey and tentatively classified as Archaic on the evidence of a projectile point fragment.

**Cultural Material Collected:**

14GE42-0-1 Tertiary flake (1); Permian chert

**Observations, Interpretations and Recommendations:**

It is not clear whether the site has been largely destroyed by erosion during the floods, or whether it is now largely under water. The lack of material, absence of visible subsurface deposits, and the general loss of site integrity, suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

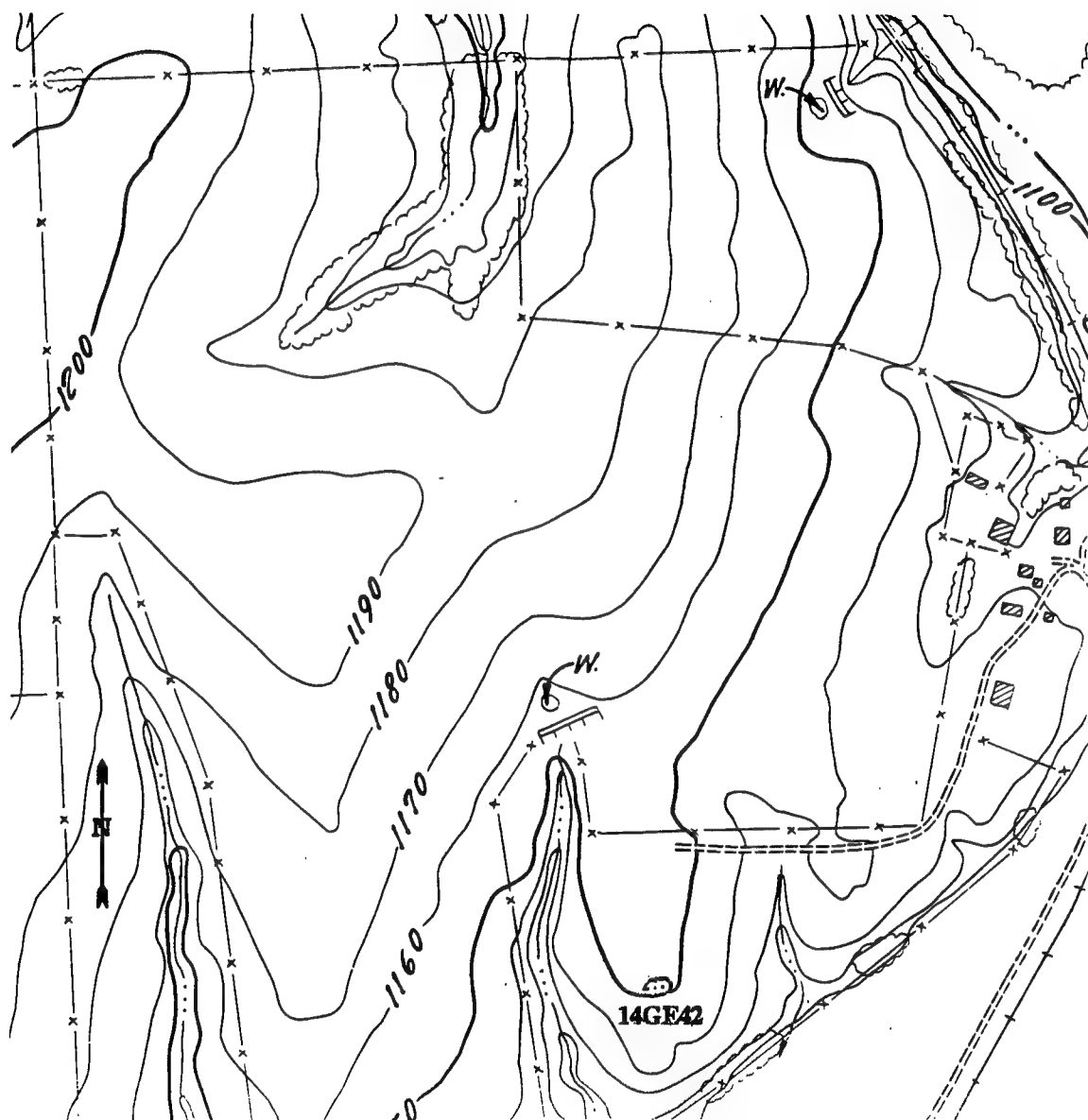


Figure 18: Map of Site 14GE42 (Scale: 1 inch = 400 feet).

## 14GE1135

**Site Name:**

**Field No:** SH12

**Cultural Affiliation:** Plains Village

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 100 sq meters

**Surface Visibility:** 70%

**Slope:** 1-4%

**Ground Cover Vegetation:** Walnut saplings, flood-scoured

**Survey Date:** 24 Sept 1993

**Land Use:** Public use

**Elevation:** 350 m (1148 ft) amsl

### Site Description and Survey Results:

This lithic scatter, including a side-notched projectile point, is located on sandy soil in a flood scoured thicket of walnut saplings on the shore of Milford Lake. It was once part of the Smoky Hill uplands. The flooding has caused extensive wave damage, enlarging a small cove adjacent to the artifact finds and, so, providing well-exposed shoreline cutbanks. An examination of these revealed no evidence of subsurface deposits; shovel tests also failed to reveal cultural deposits.

Numerous sites are located near the shoreline around the eastern end of this peninsula: sites 14GE45, 14GE44, 14GE131, 14GE43, and 14GE42. The large historic village site, 14GE1, is northeast near the tip of the peninsula.

### Cultural Material Collected:

14GE1135-0-1 Side-notched projectile point (1); Haskell Point (Perino 1968:32), missing distal portion, one barb and one tang; Permian chert

14GE1135-0-2 Scraper - broken (1); Small scraper made from crude flake; snapped in middle; Permian Chert

14GE1135-0-3 Retouched flakes (2); Marginal retouch on one edge; Permian chert

14GE1135-0-4 Shatter (1); Permian chert

### Description of 14GE1135-0-1: Side-Notched Projectile Point Base (Figure 19):

The tip, one tang and one barb of this basal fragment are snapped. The blade has straight sides and has a bi-convex transverse cross-section; the base is concave. Notches are well-formed. Typologically, this point resembles Haskell of the Plains Village period. Haskell points have been associated with occupations at Spiro dating between A.D. 1200 and 1350 (Perino 1968:32). It is made from Permian chert.

### Observations, Interpretations and Recommendations:

The presence of the Haskell point indicates that the site was used during the Plains Village period, focused on resources associated with the Republican River. The lack of cultural material found, in

spite of the well-exposed shoreline banks and scoured, formerly plowed, ground surface, suggests that this site was a small, temporary camp or worksite.

The lack of cultural material or other evidence of occupation, the absence of visible subsurface deposits and the general loss of integrity of the site due to agriculture and flood damage suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).



Figure 19: Haskell projectile point base.

Soil profile: 14GE1135

-----	0 cm
HASTINGS SILTY CLAY LOAM,	
1-4% SLOPES	
light brown, sandy loam	
-----	15
yellowish	
-----	50
reddish	
-----	60

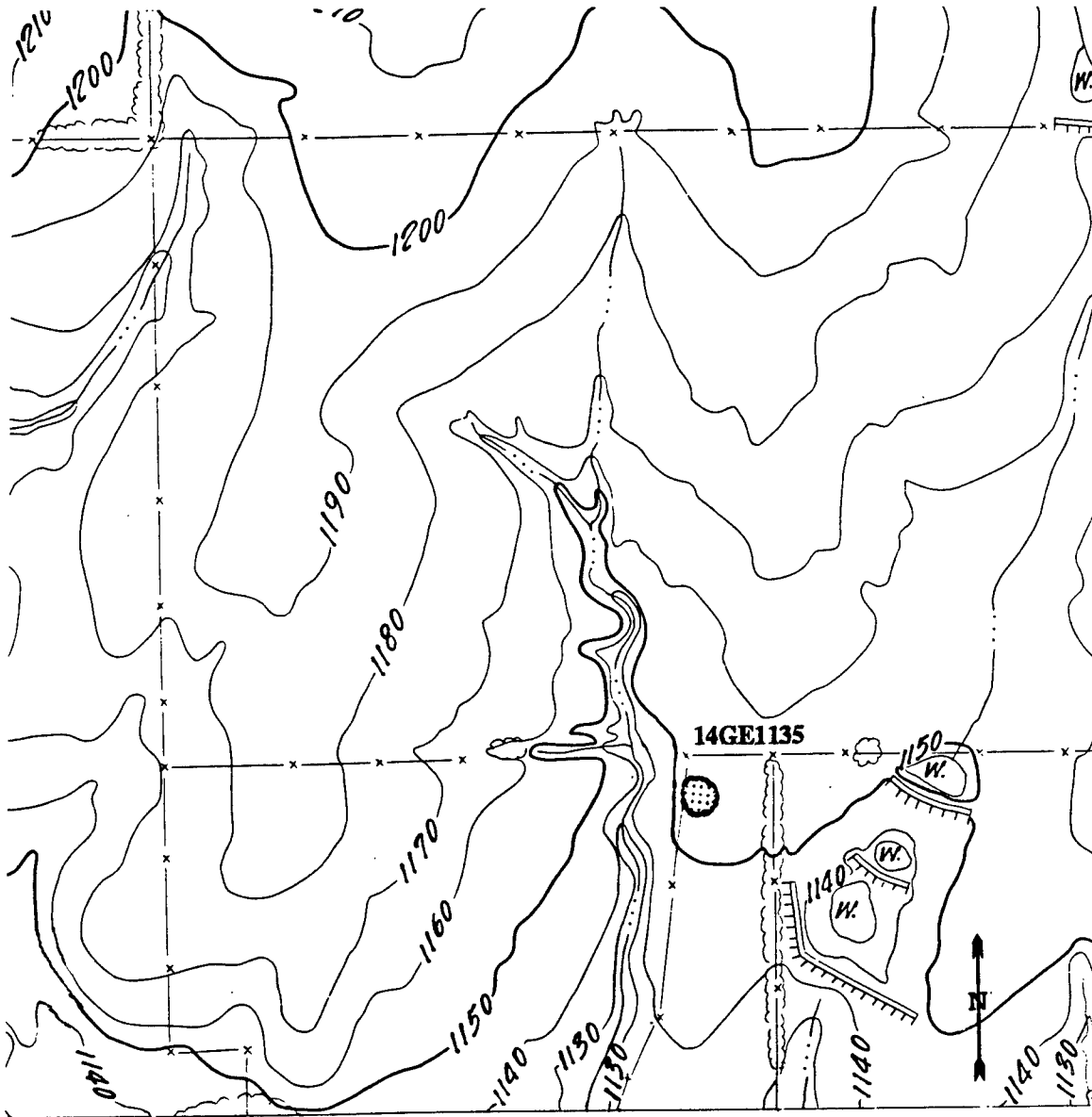


Figure 20: Map of Site 14GE1135 (Scale: 1 inch = 400 feet)

**Site Name:****Field No:** RB1**Cultural Affiliation:** Prehistoric**Topographic Setting:** Flint Hills Upland**Parent Material:** Shale**Drainage:** Republican River**Recording Agency:** Archaeology Lab, USD**Site Size:** 200 x 100 m**Surface Visibility:** 90%**Slope:** 3-7%**Ground Cover Vegetation:** Freshly planted field**Survey Date:** 25 Sept 1993**Land Use:** Cultivation**Elevation:** 1210 ft amsl**Site Description:**

This large lithic scatter is in a terraced field in the Flint Hills uplands above the bluff line on the west bank of the Republican River. The field is immediately south of a deeply cut creek that drains into the Republican at the north end of Milford Lake. The land is considerably eroded, as the soil color grades from brown to brown-red, indicating the exposure of B horizon material. This material may have been brought up when the terraces were built.

Shovel tests in the least-disturbed area of the field, along a fenceline and farm track (and adjacent to the Milford Lake property line), revealed a small, dark organic horizon at the surface and then the same well-mixed (through cultivation) brown to reddish loess found in the field. A small chunk (shatter) of Permian chert was found at the top of this brown layer in one test, but there was no other indication of occupation. Surveyors also briefly crossed into the edge of the adjacent field (outside the survey area to the west) and saw some additional material.

Two sites, 14CY46 and 14CY47, are located within a quarter mile north along the bluff top at about the same elevation.

**Cultural Material Collected:**

14CY105-0-1 Core (1); Permian chert

14CY105-0-2 End Scraper (1); Large blocky end scraper; Steep retouch on three margins; Permian chert

14CY105-0-3 Projectile point midsection (1) Small, narrow and long point; Invasive retouch; Permian chert

14CY105-0-4 Bifacial tools (3) Crude and blocky; Marginal retouch; Use-wear evident; Permian chert

14CY105-0-5 Unifacial tools (8); Large and blocky; Limited marginal retouch; use-wear evident; Permian chert

14CY105-0-6 Biface fragment (1); Portion of midsection; Invasive retouch; Heat-treated; Use-wear NOT evident macroscopically - possible preform; Permian chert

14CY105-0-7 End Scraper (1); Produced on secondary flake fragment; Steep retouch on left lateral margin; Permian chert

14CY105-0-8 Spokeshave (1) Some bifacial reduction; Steep concave retouch, some marginal retouch;  
 Light tan chert  
 14CY105-0-9 Biface fragments (2); Large and blocky; use-wear evident; Permian chert  
 14CY105-0-10 Tertiary flakes (2); Heat-treated Smoky Hill Jasper  
 14CY105-0-11 Tertiary flakes (3) Smoky Hill Jasper  
 14CY105-0-12 Tertiary flakes (23); Gray Permian chert  
 14CY105-0-13 Tertiary flake (1); Dark gray Permian chert  
 14CY105-0-14 Tertiary flakes (3); Pink chert  
 14CY105-0-15 Tertiary flake (1); Gray-brown Chalcedony  
 14CY105-0-16 Secondary flakes (2); Permian chert  
 14CY105-0-17 Potlids (3); Permian chert  
 14CY105-0-18 Large chunks (12); Permian chert  
 14CY105-0-19 Shatter (17); Permian chert  
 14CY105-1-1 Tertiary flake (1); Heat-treated Permian chert

### **Interpretation, Evaluation and Recommendations:**

This site yielded a relatively wide range of tools and flakes, covering all aspects of tool production. Most of the chert was the local Permian variety; there were also some exotic materials that would have been transported to the site (perhaps as bifacial blanks or finished tools). Surveyors also noted some introduced rock (stones and fire-cracked rocks). These data indicate that the site was an intensively occupied campsite focused on the food and lithic resources of the nearby draw and the Republican River valley.

The location of this possible habitation site in the uplands along the Republican River is pertinent to the settlement-subsistence model developed by Schmitt (1988) for the Milford Lake area (see description and evaluation of Schmitt's model above, Chapter 2, Research Goals, Predictive Model, p. 7). If the occupation can be dated, it will help integrate regional culture history with specific land use patterns, thereby enhancing the predictability of the model.

These survey results suggest that the site merits further National Register testing. Site integrity has been severely diminished by the extensive terracing and cultivation (with resulting soil erosion), but the field margins at the farm track and fenceline may contain some undisturbed deposits (although no subsurface organic deposits were visible in shovel testing). Such testing is deemed important as the field continues to be leased for agriculture and has been, and will continue to be, damaged by cultivation.

#### **Soil profile: 14CY105**

----- 0 cm  
 HOLDER SILT LOAM,  
 3-7% SLOPES  
 black (probably organic),  
 rest of field shows cline from  
 brownish (w/ yellow) at top  
 to reddish at field edge  
 ----- 60

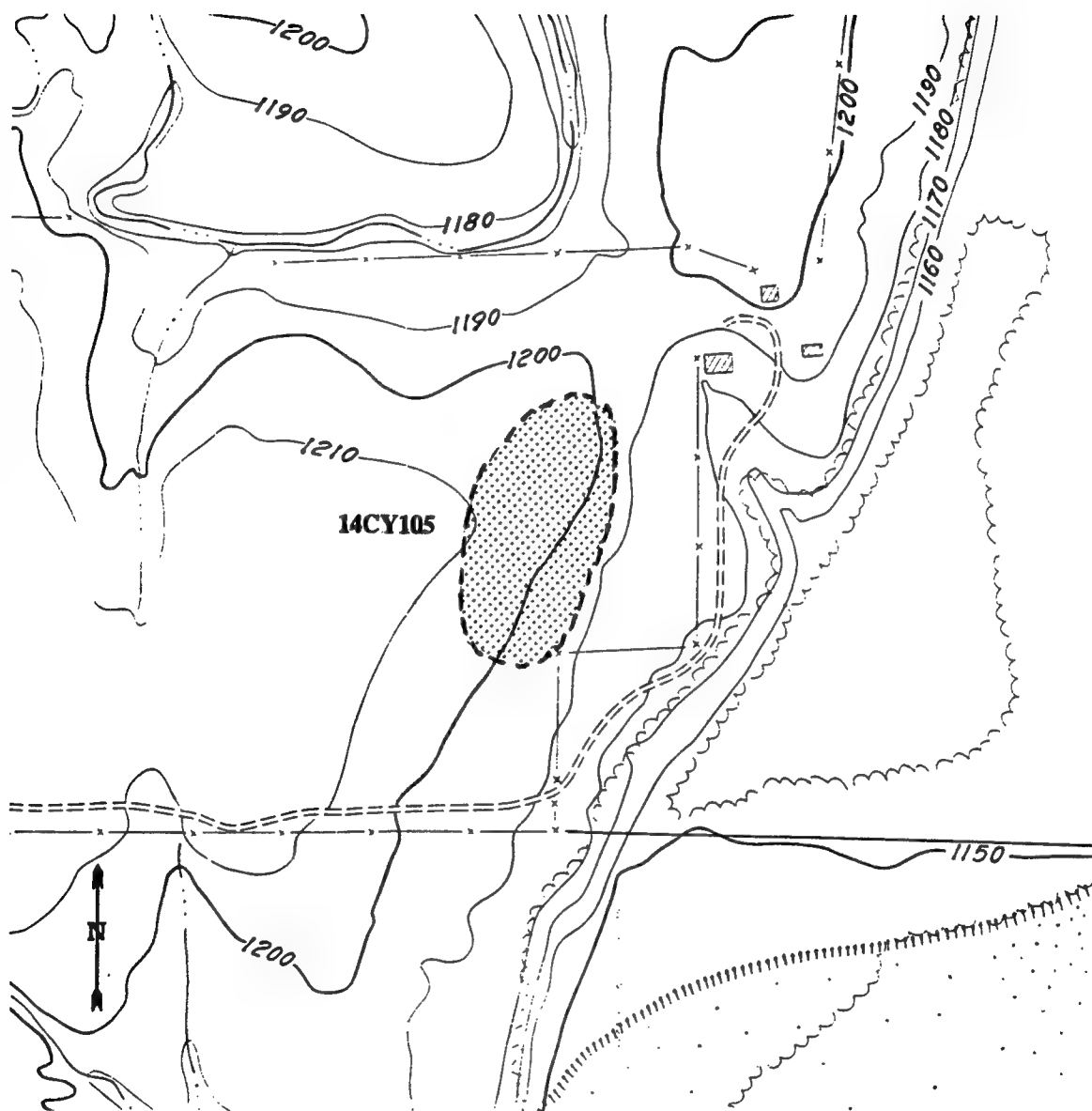


Figure 21: Map of Site 14CY105 (Scale: 1 inch = 400 feet)



**Site Name:****Field No:** RB3**Cultural Affiliation:** Historic**Topographic Setting:** Flint Hills Upland**Parent Material:** Shale**Drainage:** Republican River**Recording Agency:** Archaeology Lab, USD**Site Size:** 120 x 150 m**Surface Visibility:** 10-40%**Slope:** 3-7%**Ground Cover Vegetation:** Overgrown farmstead, meadow**Survey Date:** 26 Sept 1993**Land Use:** Public use**Elevation:** 1191 ft amsl**Site Description and Survey Results:**

This farmstead is located in the Flint Hills uplands, just above the bluff line on the west bank of the Republican River at the north end of Milford Lake.

The house area in the northern part of the site has concrete and brick rubble with a lilac bordered cement walk. A cement cistern with '1914' inscribed on the rim is just north of the northwest corner of the house rubble. A WPA type cement outhouse base is at the northeast corner of the house rubble. Metal fragments included a clutch part from a windmill labeled 'AERMOTOR CO CHICAGO' with patents dating from 1904 to 1918.

The barn, cellar, and other foundations to the south and east are mortared limestone with coarse cement. To the southeast is a collapsed storm cellar with a tree growing from the base of the steps.

Numbered features on the site map are defined as follows:

- 1 - cistern, dated 1914
- 2 - cement and limestone foundation
- 3 - outhouse base
- 4 - house rubble consisting of cement, brick and limestone; steps are visible in interior and a corner stands along the perimeter
- 5 - barren ground with trees surrounding it (possible barn structure)
- 6 - cement and limestone foundation
- 7 - storm cellar with earthen berm and stone steps
- 8 - rubble pile and corner of foundation

**Cultural Material Collected:**

- 14CY106-0-1 Ceramic: Porcelain doll thigh or upper arm, etched "0½" at joint  
 14CY106-0-2 Ceramic: Porcelain body sherds, white  
 14CY106-0-3 Ceramic: Ironstone rim sherd, white  
 14CY106-0-4 Ceramic: Ironstone body sherds, white  
 14CY106-0-5 Ceramic: Stoneware body sherd, gold, badly eroded

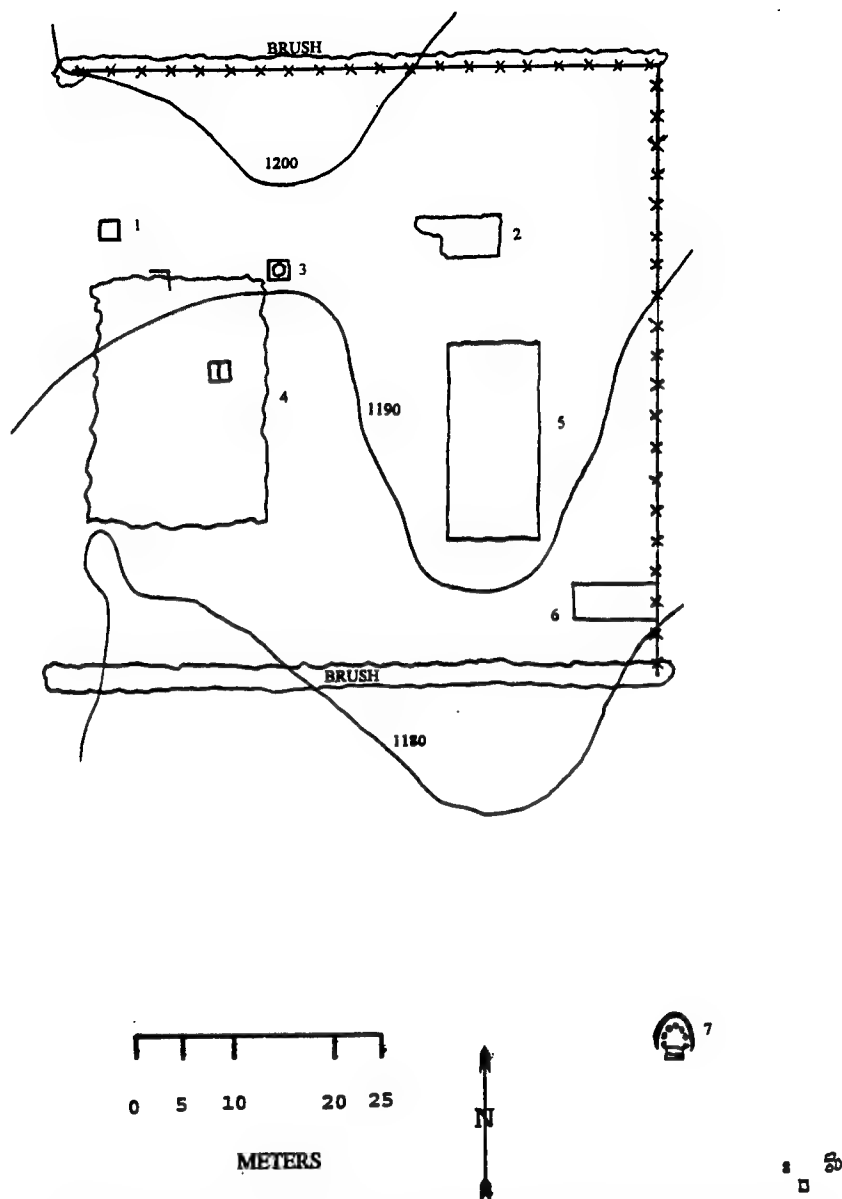
14CY106-0-6 Glass: Bottle base fragment, oval, clear, embossed "...na'  
14CY106-0-7 Glass: Slightly curved shards, lt. amethyst  
14CY106-0-8 Glass: Slightly curved shard, lt. green  
14CY106-0-9 Glass: Flat fragments, clear, opalescent  
14CY106-0-10 Metal: Tobacco can, flattened, rusted  
14CY106-0-11 Metal: Wire nail  
14CY106-0-12 Metal: Cast iron fragment (part of stove?)  
14CY106-0-13 Masonry: Mortar strip  
14CY106-1-1 Rock: Tan quartz cobble, battered

#### **Observations, Interpretations and Recommendations:**

The farmstead appears to have two separate housing elements, north and south of the access road. The southern section has limestone foundations, suggesting an earlier date than the northern section. George Gilbert obtained the patent to this farmstead in 1871 (Table A3). From 1905 to 1923 Henry A. Hoch owned it; he probably built the cistern. R.B. Hammerli owned it from 1923 to 1936 when the WPA type outhouse was installed.

The cultural material observed and collected supports occupation dates from late 19th century through the first half of the 20th century. The amethyst glass shards 14CY106-0-7 would date between 1880 and 1916 (Rock 1981:17); while the colored stoneware shard 14CY106-0-5 was probably not made until the 1920s or later.

The lack of surface integrity of this farmstead suggests that this site is not of sufficient significance to require further National Register testing. However, as the farmstead appears to have had two distinct occupation phases, one possibly dating from the time of the patent (1871), and as this single site has the potential to provide a sequence of farmstead development from this time to the mid-20th century, it is recommended that further National Register testing be done (i.e. archaeological survey and subsurface testing).



Numbered features on the map of site 14CY106 are defined as follows:

- 1 - cistern, dated 1914
- 2 - cement and limestone foundation
- 3 - outhouse base
- 4 - house rubble consisting of cement, brick and limestone;  
steps are visible in interior and a corner stands along the perimeter
- 5 - barren ground with trees surrounding it (possible barn structure)
- 6 - cement and limestone foundation
- 7 - storm cellar with earthen berm and stone steps
- 8 - rubble pile and corner of foundation

Figure 22: Map of Site 14CY106

**Site Name:**  
**Field No:** RB5  
**Cultural Affiliation:** Prehistoric  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Shale  
**Drainage:** Republican River  
**Recording Agency:** O'Brien 1976  
**Site Size:** Undetermined  
**Surface Visibility:** 50%  
**Slope:** 3-7%  
**Ground Cover Vegetation:** Milo field  
**Survey Date:** 26 Sept 1993  
**Land Use:** Cultivation  
**Elevation:** 1211 ft amsl

**Site Description and Survey Results:**

This previously recorded site, described by Muller and Schock (1964) as a largely unvandalized mound, is located in a milo field in the Flint Hills uplands above the bluff line on the west bank of the Republican River at the north end of Milford Lake.

Surveyors could not detect the mound shape in the milo field, said to measure 26 x 45 feet and 2 - 3 feet high, but in searching the area, they discovered a core and a small scatter of debitage. The lithics are consistent with Muller & Schock's findings, as they reported flakes along with a fragment of human bone.

Site 14CY106 is south along the bluff top; 14CY47 is north, in the same field at about the same elevation.

**Cultural Material Collected:**

14CY46-0-1 Core (1); Permian chert (1)  
 14CY46-0-2 Shatter (1); Dark brown chert (1)  
 14CY46-0-3 Tertiary flakes (4); Permian chert (4)  
 14CY46-0-4 Bifacial thinning flake (1); Gray Permian chert

**Observations, Interpretations and Recommendations:**

Surveyors could not detect a mound shape in the milo field, but they did find a scatter of lithics, as predicted from Muller & Schock's site report. This scatter attests to some form of transitory occupation, although it is clearly impossible to relate this evidence of activity with the putative burial mound site. If the mound is, as was reported, "unvandalized", it must have been disturbed by agriculture, given that a human bone fragment was recovered. It is possible that the definition of the mound has been further reduced in the past thirty years by plowing and soil erosion.

An unvandalized burial mound clearly has archaeological significance in the region, as the site may contain datable cultural materials and evidence of prehistoric burial practices and ideology. As this site is potentially National Register eligible, further testing (ie. archaeological survey and subsurface

testing) is recommended (subject to NAGPRA (the Native American Graves Protection Act) regulations and guidelines).

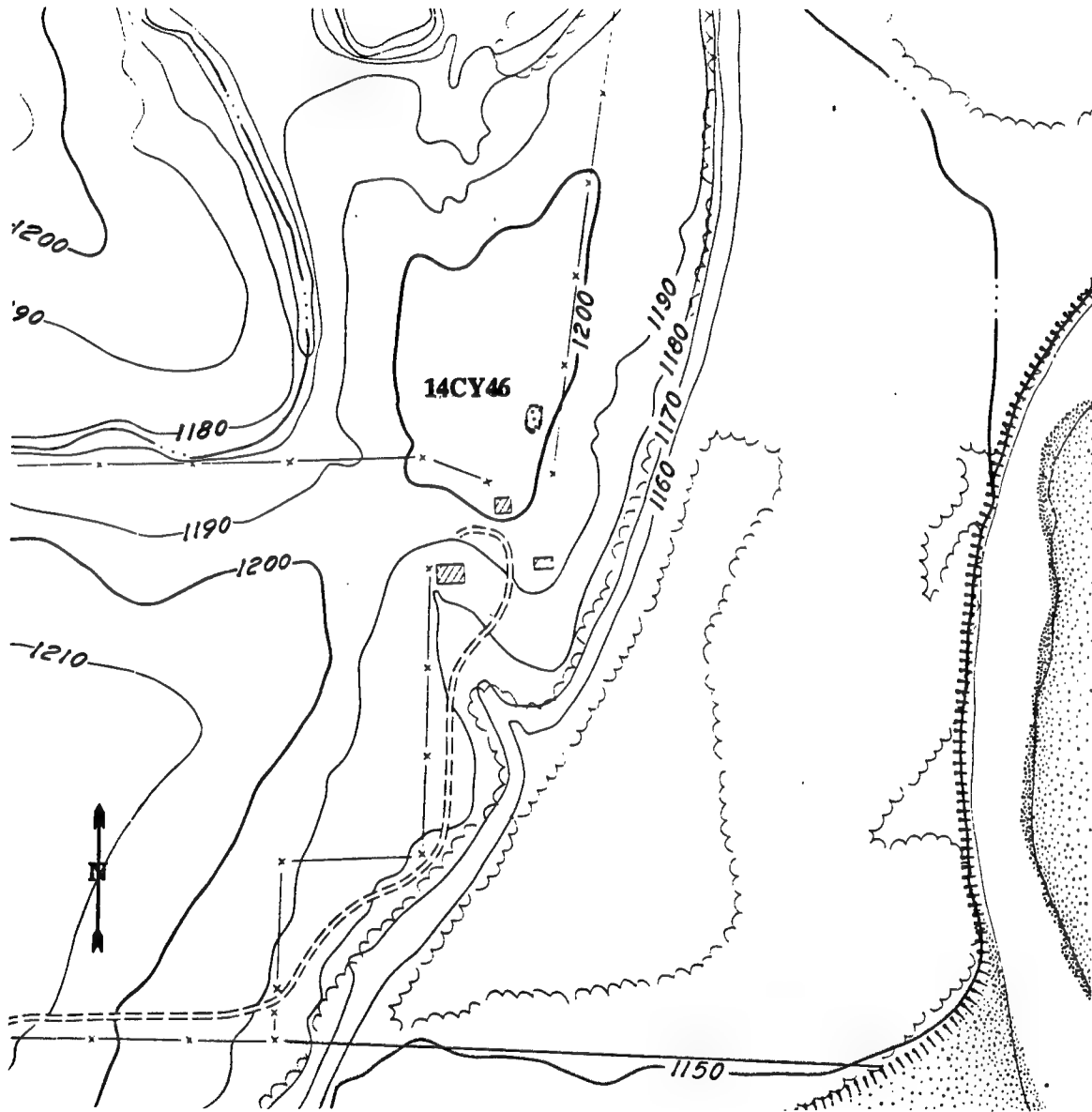


Figure 23: Map of Site 14CY46 (Scale: 1 inch = 400 feet)

**Site Name:**  
**Field No:** RB6  
**Cultural Affiliation:** Prehistoric  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Permian Limestone  
**Drainage:** Republican River  
**Recording Agency:** O'Brien 1976  
**Site Size:** Undetermined  
**Surface Visibility:** 50%  
**Slope:** 3-7%  
**Ground Cover Vegetation:** Milo  
**Survey Date:** 26 Sept 1993  
**Land Use:** Cultivation  
**Elevation:** 1201 ft amsl

**Site Description and Survey Results:**

This flake scatter, previously located by Muller and Schock (1964), is in the Flint Hills uplands above the bluff line on the west bank of the Republican River at the north end of Milford Lake. It is adjacent to a large, deep draw with an intermittent creek. Surveyors recovered a scatter of debitage in a milo field, but observed no introduced rock or other evidence of occupation. The site is at the Milford Lake property line; it is possible that the site extends into the adjacent pasture to the west.

Site 14CY46 is located south along the bluff top in the same field at about the same elevation.

**Cultural Material Collected:**

14CY47-0-1 Biface fragment (1); Invasive retouch; Use-wear evident on all edges; Permian chert  
 14CY47-0-2 Retouched flake/Graver (1); Marginal unifacial retouch on 2 edges; burin scar; Permian chert  
 14CY47-0-3 Retouched flake/Spokeshave (1); One edge shows concave working surface; Marginal retouch on two opposing edges; Smoky Hill Jasper

**Observations, Interpretations and Recommendations:**

The survey results suggest that this scatter may represent redeposited material or the margins of a site further upslope - outside the survey area.

The paucity of material relative to the exposed surface area, the lack of evidence of subsurface deposits, and the destruction of site integrity by agriculture suggests that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

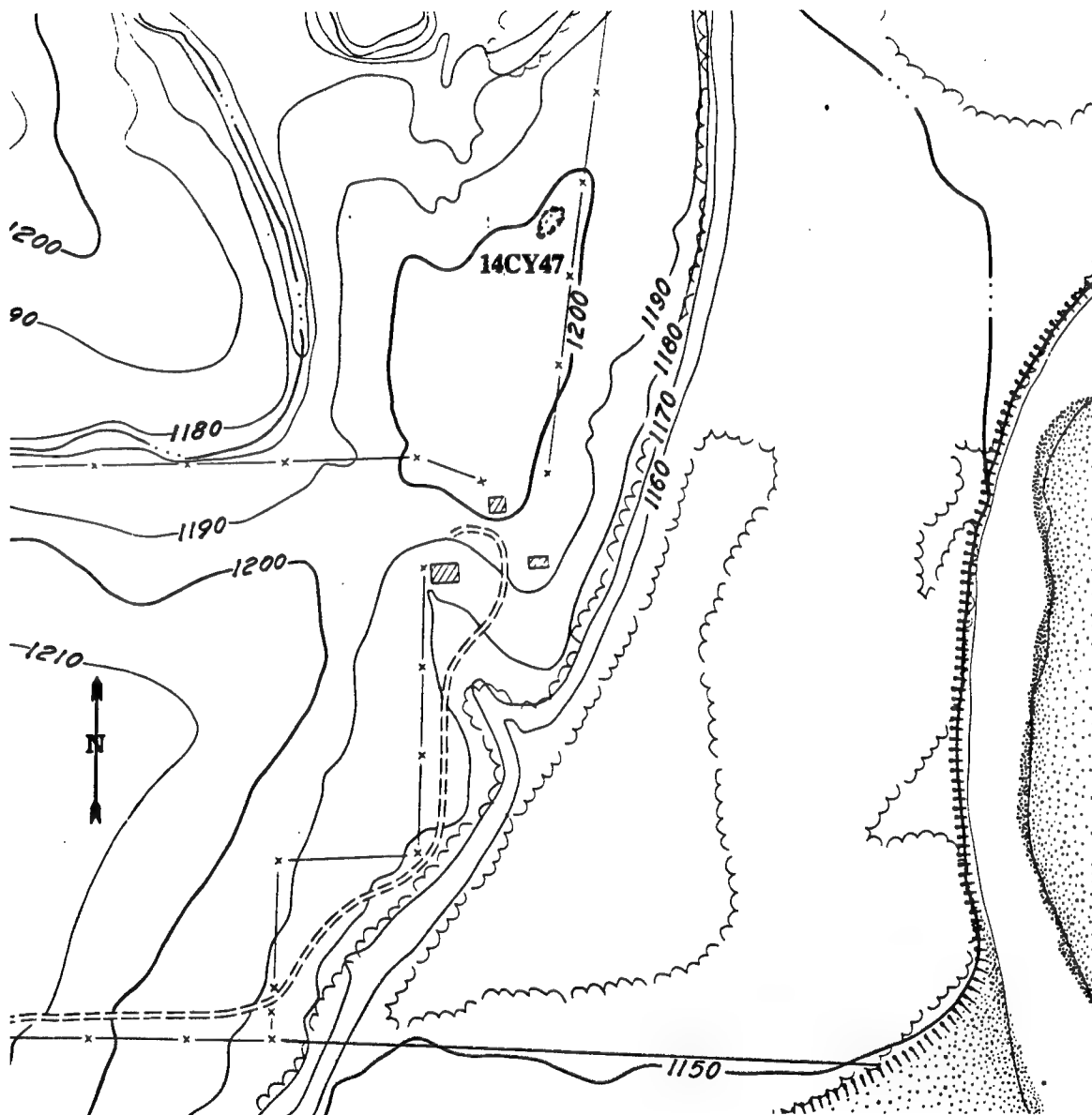


Figure 24: Map of Site 14CY47 (Scale: 1 inch = 400 feet)

**Site Name:**  
**Field No:** RB7  
**Cultural Affiliation:** Prehistoric  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Shale  
**Drainage:** Republican River  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** Spot Find  
**Surface Visibility:** 80%  
**Slope:** 3-7%  
**Ground Cover Vegetation:** Freshly planted field  
**Survey Date:** 26 Sept 1993  
**Land Use:** Cultivation  
**Elevation:** 1210 ft amsl

#### Site Description:

This prehistoric site, an isolated tool findspot, is in the Flint Hills uplands above the bluff line on the west bank of the Republican River at the north end of Milford Lake. Surveyors discovered the object in a newly planted field. Close examination of the surface in the area failed to reveal any other cultural material.

Three sites, 14CY106, 14CY46 and 14CY47, are located within a mile south along the bluff top at about the same elevation.

#### Cultural Material Collected:

14CY107-0-1 Unifacial Knife/Side scraper (1); Marginal retouch on all edges; Wreford chert

#### Observations, Interpretations and Recommendations:

As this artifact is a tool rather than debitage, and as the surrounding field had a high surface and shallow subsurface visibility (afforded by the recent cultivation), it is likely that it was lost or discarded. It is also possible that it may have been transported from a site on the hillslope above the survey area.

These survey results, along with the fact that the subsurface integrity has been severely disturbed by agriculture and erosion, suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

#### Soil profile: 14CY107

----- 0 cm  
 HOLDER SILT LOAM,  
 3-7% SLOPES  
 plow zone - loose, brown  
 loam, clayey and sandy  
 ----- 15  
 reddish increasing  
 ----- 30



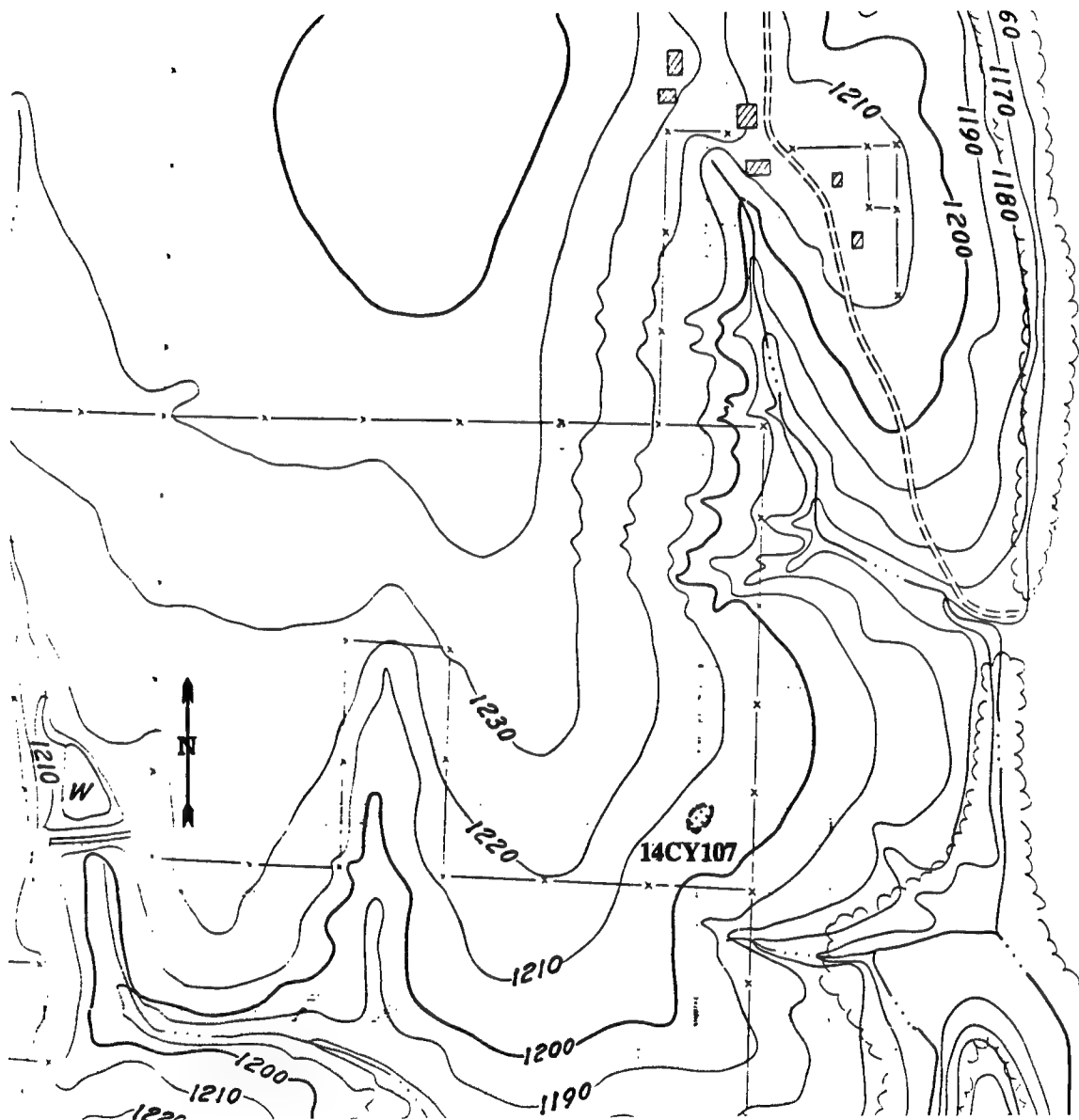


Figure 25: Map of Site 14CY107 (Scale: 1 inch = 400 feet)

## 14CY108

**Site Name:****Field No:** RB8**Cultural Affiliation:** Prehistoric**Topographic Setting:** Flint Hills Upland**Parent Material:** Permian Limestone**Drainage:** Republican River**Recording Agency:** Archaeology Lab, USD**Site Size:** 100 sq meters**Surface Visibility:** 80%**Slope:** 3-7%**Ground Cover Vegetation:** Freshly planted field**Survey Date:** 26 Sept 1993**Land Use:** Cultivation**Elevation:** 1215 ft amsl**Site Description:**

This small lithic scatter is located on the relatively flat apron of a hillslope in the Flint Hills uplands above the bluff line on the west bank of the Republican River. Surveyors had excellent visibility of the ground surface and shallow subsurface.

Site 14CY107 is south in the same field at a slightly higher elevation.

**Cultural Material Collected:**

14CY108-0-1 Unifacially retouched primary flake (1); Broken - proximal portion; Steep retouch on both margins; Permian chert

14CY108-0-2 Biface tip (1); Broken - distal portion; Invasive retouch both sides; use-wear evident on all margins; Permian chert

14CY108-0-3 Shatter (1) All surfaces show some degree of patination - may be natural; Permian chert

14CY108-0-4 Pebble (1); Some battering on one end - possible hammerstone; Quartz

**Observations, Interpretations and Recommendations:**

This lithic scatter may represent debris from the working of a bifacial core, probably as part of a food procurement activity. It is also possible that the material was transported by colluvial action or surface erosion, although there was no cultural material on the slope above.

The paucity of material, the lack of subsurface deposits, and the destruction of site integrity by agriculture all suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14CY108

----- 0 cm  
 HOLDER SILT LOAM,  
 3-7% SLOPES  
 plow zone - loose, brown  
 loam, clayey and sandy  
 ----- 15  
 reddish increasing  
 ----- 30

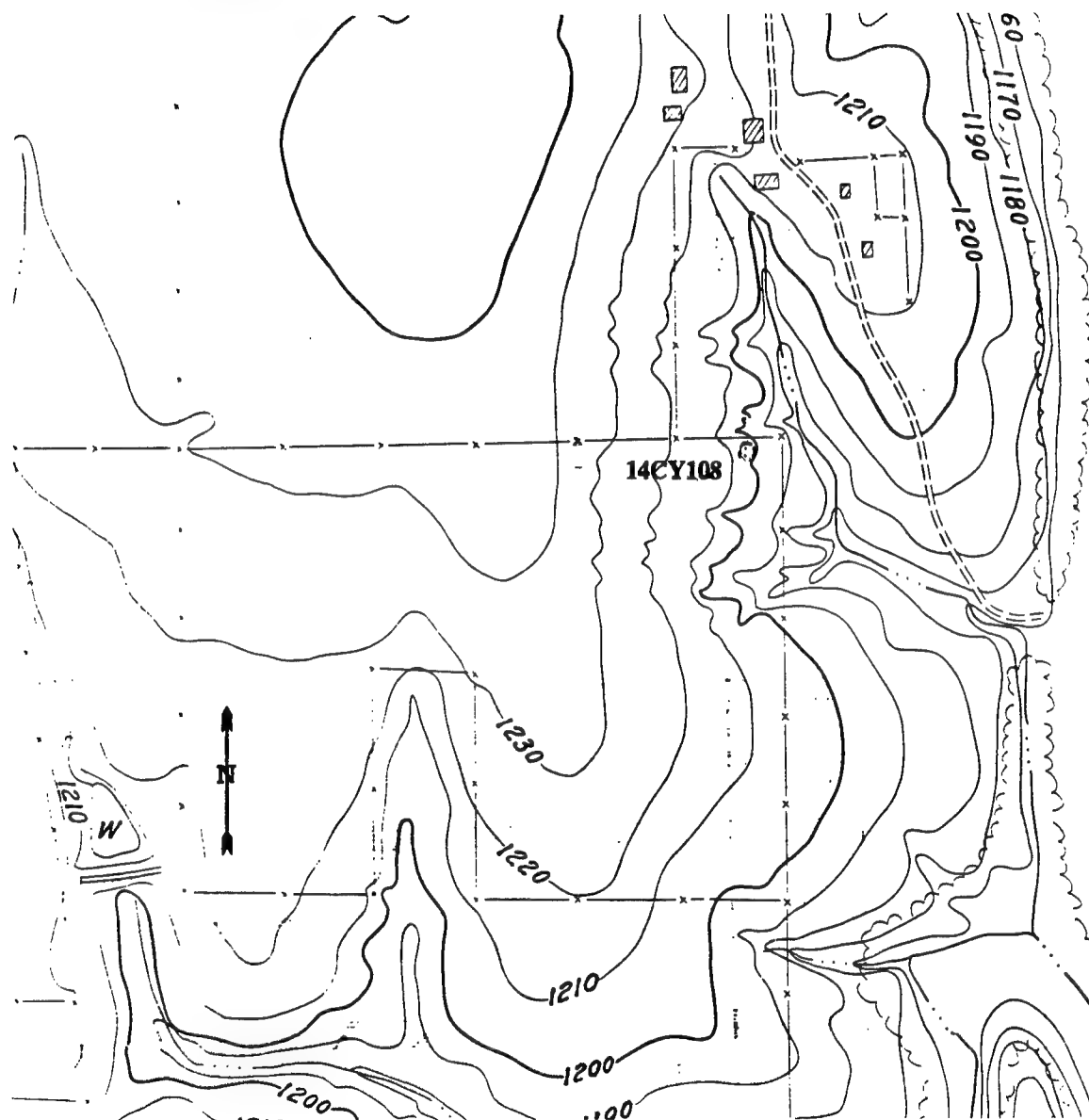


Figure 26: Map of Site 14CY108 (Scale: 1 inch = 400 feet)

**Site Name:**  
**Field No:** RB9  
**Cultural Affiliation:** Prehistoric  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Shale  
**Drainage:** Republican River  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** 40 x 60 m  
**Surface Visibility:** 90%  
**Slope:** 9-15%  
**Ground Cover Vegetation:** Freshly planted field  
**Survey Date:** 26 Sept 1993  
**Land Use:** Cultivation  
**Elevation:** 1235 ft amsl

**Site Description and Survey Results:**

This concentration of lithic material is on east-facing hillslope (now a cultivated field) in the Flint Hills uplands above the bluff line on the west bank of the Republican River. It is adjacent to a deep draw (now a road) that provides access down the steep bluff to the floodplain. Surveyors found lithic material and some bone (but no fire-cracked or other introduced rock) scattered across the hillslope to the landscaped edges of the cultivated field adjacent to a farmstead.

Site 14CY107 is nearby to the south along the bluff top at about the same elevation.

**Cultural Material Collected:**

14CY109-0-1 Core/Chopper (1); Exhausted core possibly utilized as a chopper or pick - heavy macroscopic battering on one edge; Wreford chert  
 14CY109-0-2 Unifacially retouched flake (1); Midsection; Invasive retouch; Wreford chert  
 14CY109-0-3 End scraper (1); Produced on a relatively large secondary flake; Steep retouch on distal end, minimal otherwise; Cream-colored Permian chert  
 14CY109-0-4 Retouched thinning flake (1); Marginal retouch on lateral edges; Wreford chert  
 14CY109-0-5 Long bone fragments (2); Eroded and slightly mineralized; mammalian, probably *Bos*, *Bison*, or *Equus*  
 14CY109-0-6 Secondary flake (1); Chalcedony, gray  
 14CY109-0-7 Shatter (6); Permian chert  
 14CY109-0-8 Shatter (1); Permian chert  
 14CY109-0-9 Flake fragments (2); Heat-treated Permian chert  
 14CY109-0-10 Tertiary flakes (2); Light gray Permian chert  
 14CY109-0-11 Tertiary flakes (3); Gray Permian chert  
 14CY109-0-12 Unifacially retouched flake (1); Invasive retouch; Permian chert  
 14CY109-0-13 Biface fragment (1); Distal End (tip); Invasive retouch; Edge damage along both sides; Permian chert

### Observations, Interpretations and Recommendations:

This lithic concentration may represent an occupation site associated with the resources of the Republican River valley. The material may be flake production from bifacial cores as well as unifacial retouch of flakes for on-site use in resource extraction tasks. The small bone fragments are likely from animals procured for food by the occupants. The slope is relatively steep, however, and so it is possible that this material has moved downslope as part of the general movement of colluvium or, during the agricultural period, through surface erosion.

The relatively small amount of material, the lack of introduced rock (that could have been used for hearths, for example), the possibility that the site is a secondary deposit from upslope, and the general loss of site integrity due to landscaping (around the house and outbuildings), cultivation and soil erosion suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14CY47

----- 0 cm  
HOLDER SILT LOAM,  
3-7% SLOPES  
plow zone - loose, brown  
loam, clayey and sandy  
----- 15  
reddish increasing  
----- 30

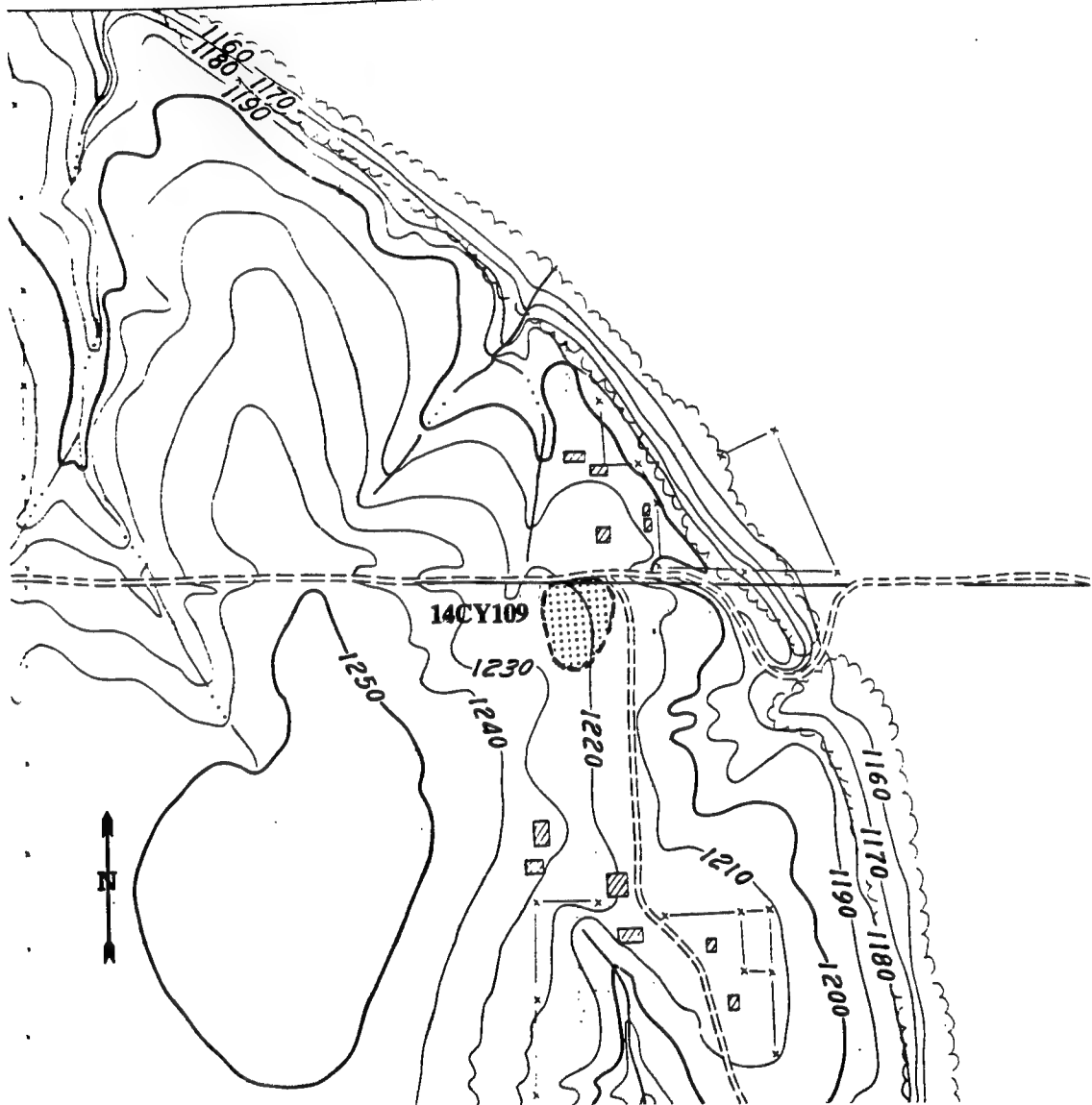


Figure 27: Map of Site 14CY109 (Scale: 1 inch = 400 feet)

## 14CY25

**Site Name:**

**Field No:** MC1

**Cultural Affiliation:** Plains Woodland (possible Archaic)

**Topographic Setting:** Terrace

**Parent Material:** Alluvium

**Drainage:** Mall Creek

**Recording Agency:** Muller & Schock 1964

**Site Size:** 30 x 18 m

**Surface Visibility:** 40%

**Slope:** Nearly level

**Ground Cover Vegetation:** Tallgrass prairie

**Survey Date:** 27 Sept 1993

**Land Use:** Public use

**Elevation:** 1165 ft amsl

### **Site Description and Survey Results:**

This previously recorded lithic scatter is located on a terrace remnant on the east side of Mall Creek. Surveyors collected the material along the west edge of a cultivated field (in wheat stubble) and near an adjacent stone fence. The site may extend as part of the higher ground of the terrace into a wooded area across the Milford Lake property line.

Four other prehistoric sites are on the east bank of Mall Creek in the survey area: 14CY23 to the north and 14CY42, 14CY102, and 14CY57, all to the south. 14CY25, the J.P. Williams site, was originally recorded by Schultz in the 1920s.

### **Cultural Material Collected:**

14CY25-0-1 Utilized Core (1); Permian chert (1)

14CY25-0-2 Chunk with fossil (1); Permian chert (1)

14CY25-0-3 Retouched secondary flake (1); Limited marginal retouch; Permian chert (1)

14CY25-0-4 Secondary flakes (6); Permian chert (1 heat-treated)

14CY25-0-5 Tertiary flakes (15); Permian chert (3 heat-treated)

14CY25-0-6 Shatter (6); Permian chert (3 heat-treated)

### **Observations, Interpretations and Recommendations:**

The material at this site suggests that the occupants may have collected and tested raw material (cherts) for later use. Muller & Schock (1964) tentatively identified this site as Woodland, with a possible Archaic component, based on their analysis of the Schultz collection. The material recovered in the revisit lacks the diagnostic information necessary to verify this assessment.

The relative paucity of newly exposed cultural material, the lack of subsurface cultural deposits, and the general loss of integrity of the site due to agriculture and flooding suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

# Soil profile: 14CY25

----- 0 cm  
 MUIR SILT LOAM  
 sandy loam, brown with  
 increasing yellow  
 ----- 15  
 increasing sand, yellow  
 with reddish tinge  
 ----- 30  
 sand, increasing yellow  
 ----- 60

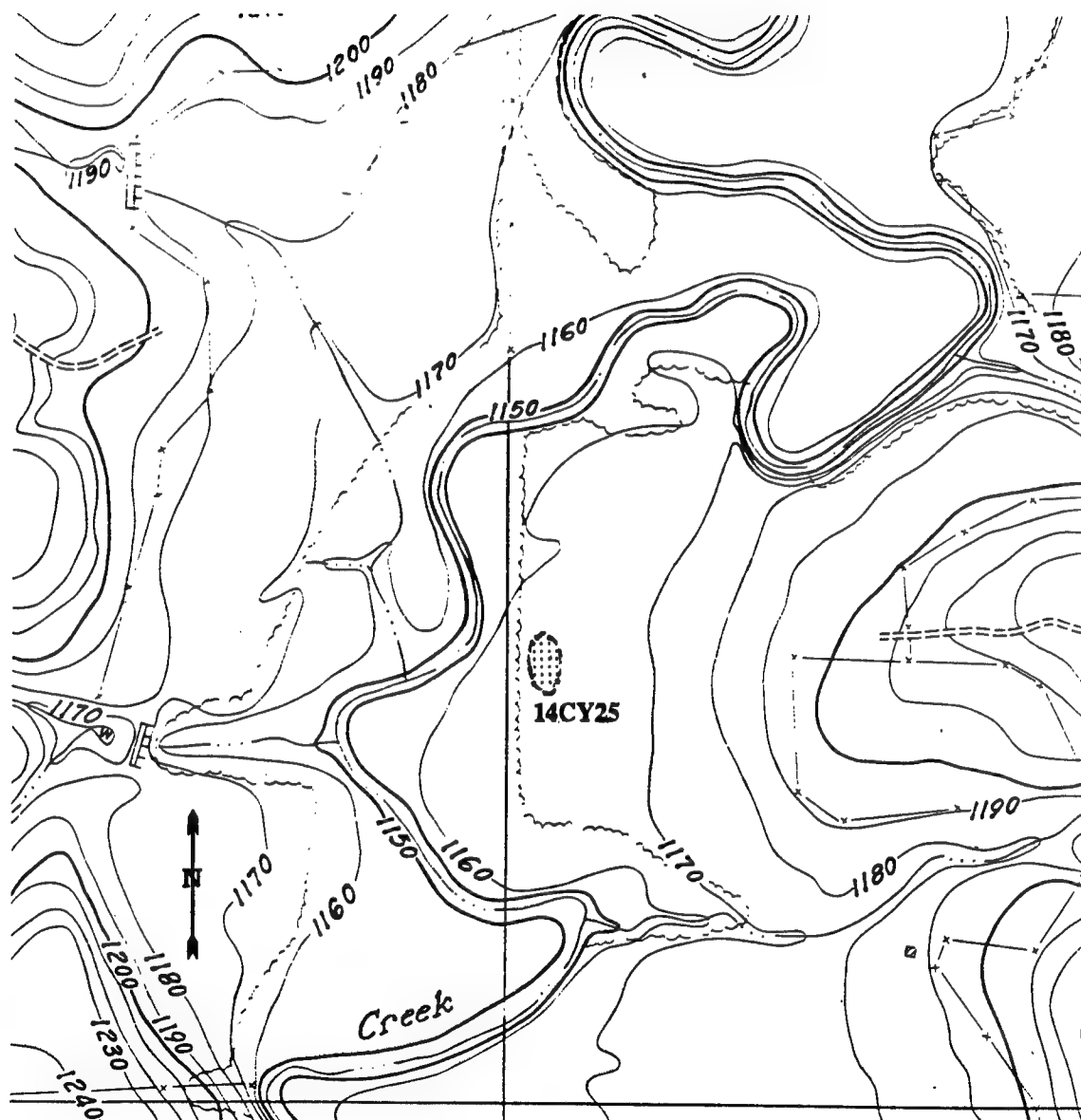


Figure 28: Map of Site 14CY25 (Scale: 1 inch = 400 feet)



## 14CY42

**Site Name:**

**Field No:** MC2

**Cultural Affiliation:** Plains Woodland (possible Archaic)

**Topographic Setting:** Terrace

**Parent Material:** Alluvium

**Drainage:** Mall Creek

**Recording Agency:** O'Brien 1976

**Site Size:** 5 x 15 m

**Surface Visibility:** 10-20%

**Slope:** Nearly level

**Ground Cover Vegetation:** Tallgrass prairie

**Survey Date:** 27 Sept 1993

**Land Use:** Public use

**Elevation:** 1165 ft amsl

**Site Description and Survey Results:**

This previously recorded site is located on a terrace on the east side of Mall Creek, overlooking a small oxbow. Surveyors found a small amount of material scattered amongst the wheat stubble of a harvested field.

Four sites are on the east bank of Mall Creek in the survey area: 14CY23 and 14CY25 to the north and 14CY102 and 14CY57 to the south. Surveyors could not relocate 14CY23 or 14CY102.

**Cultural Material Collected:**

14CY42-0-1 Core, discarded (1); Permian chert

14CY42-0-2 Tertiary flakes (2); Permian chert

**Observations, Interpretations and Recommendations:**

14CY42 was identified in the Muller and Schock (1964) survey who considered it 'probably closely related' to 14CY25, and therefore possibly Woodland with an Archaic component. The material recovered does not contribute further to an understanding of this site.

The paucity of material in this revisit, in spite of the continued cultivation of the field and flood-based erosion, the lack of evidence of subsurface cultural deposits, and the general loss of site integrity due to agriculture and erosion suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

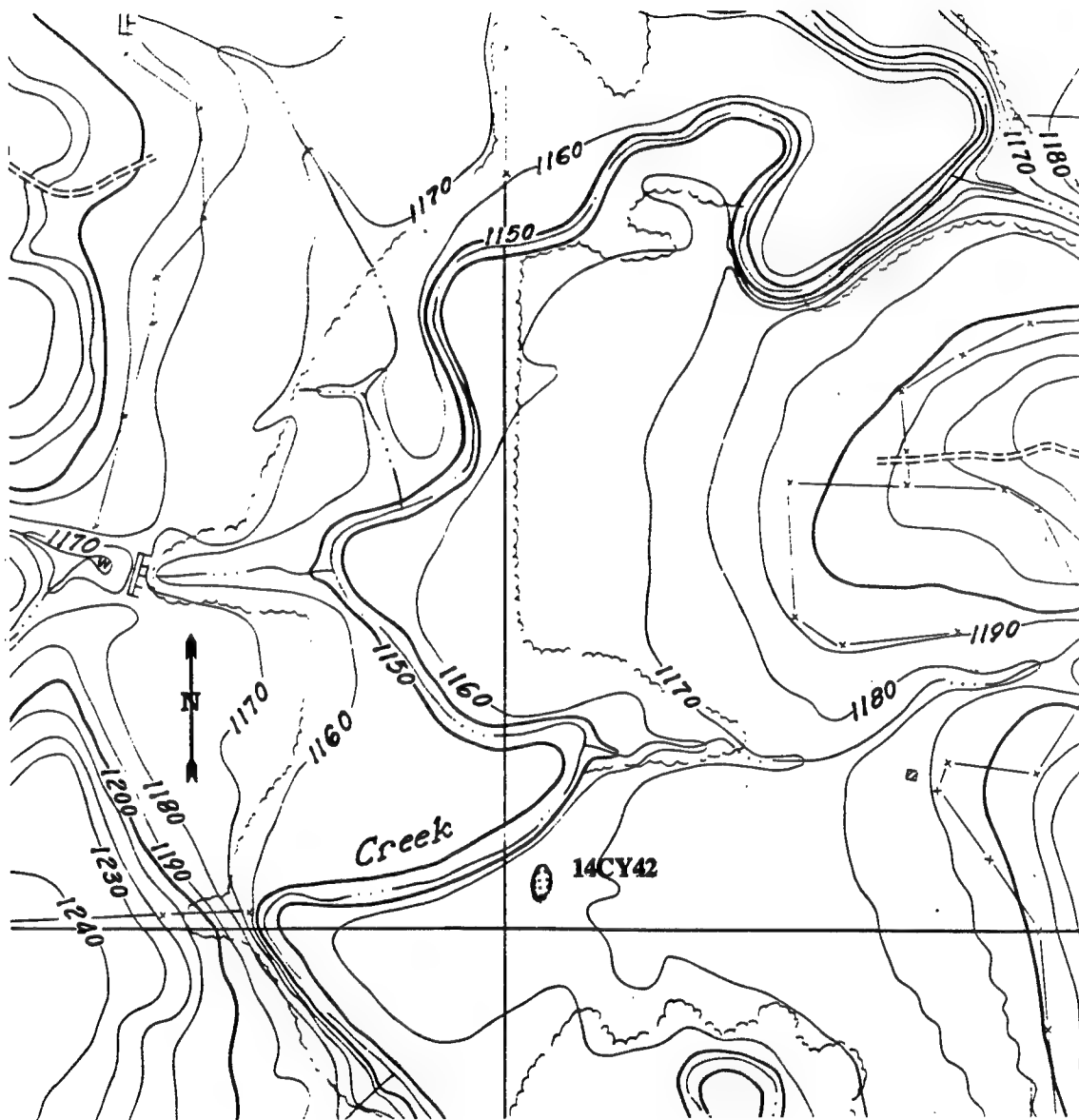


Figure 29: Map of Site 14CY42 (Scale: 1 inch = 400 feet)

## 14CY110

**Site Name:**

**Field No:** MC3

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Terrace

**Parent Material:** Alluvium

**Drainage:** Mall Creek

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 45 x 20 m

**Surface Visibility:** 80%

**Slope:** Nearly level

**Ground Cover Vegetation:** Tallgrass prairie

**Survey Date:** 27 Sept 1993

**Land Use:** Public use

**Elevation:** 1174 ft amsl

### Site Description and Survey Results:

This lithic scatter is located on a terrace remnant on the east side of Mall Creek and adjacent to a small toe slope. The area is a plowed soybean field, bordered by fields of wheat stubble and milo.

There are five sites nearby on the east bank of Mall Creek in the survey area: 14CY23, 14CY25, and 14CY42 to the north and 14CY102 and 14CY57 to the south. Surveyors could not relocate 14CY23 or 14CY102.

### Cultural Material Collected:

14CY110-0-1 Retouched flake (1); Permian chert

14CY110-0-2 Primary flake (1); Permian chert

14CY110-0-3 Shatter (2); Permian chert

### Observations, Interpretations and Recommendations:

The nature of the lithics found here suggests a single activity, such as a limited resource extraction or tool manufacturing or maintenance task, associated with resources on Mall Creek.

The paucity of cultural material, the lack of subsurface cultural deposits, and the general loss of site integrity due to agriculture and erosion suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14CY110

----- 0 cm

MUIR SILT LOAM

dark gray, silty clay

----- 29

gray, silty clay

----- 60

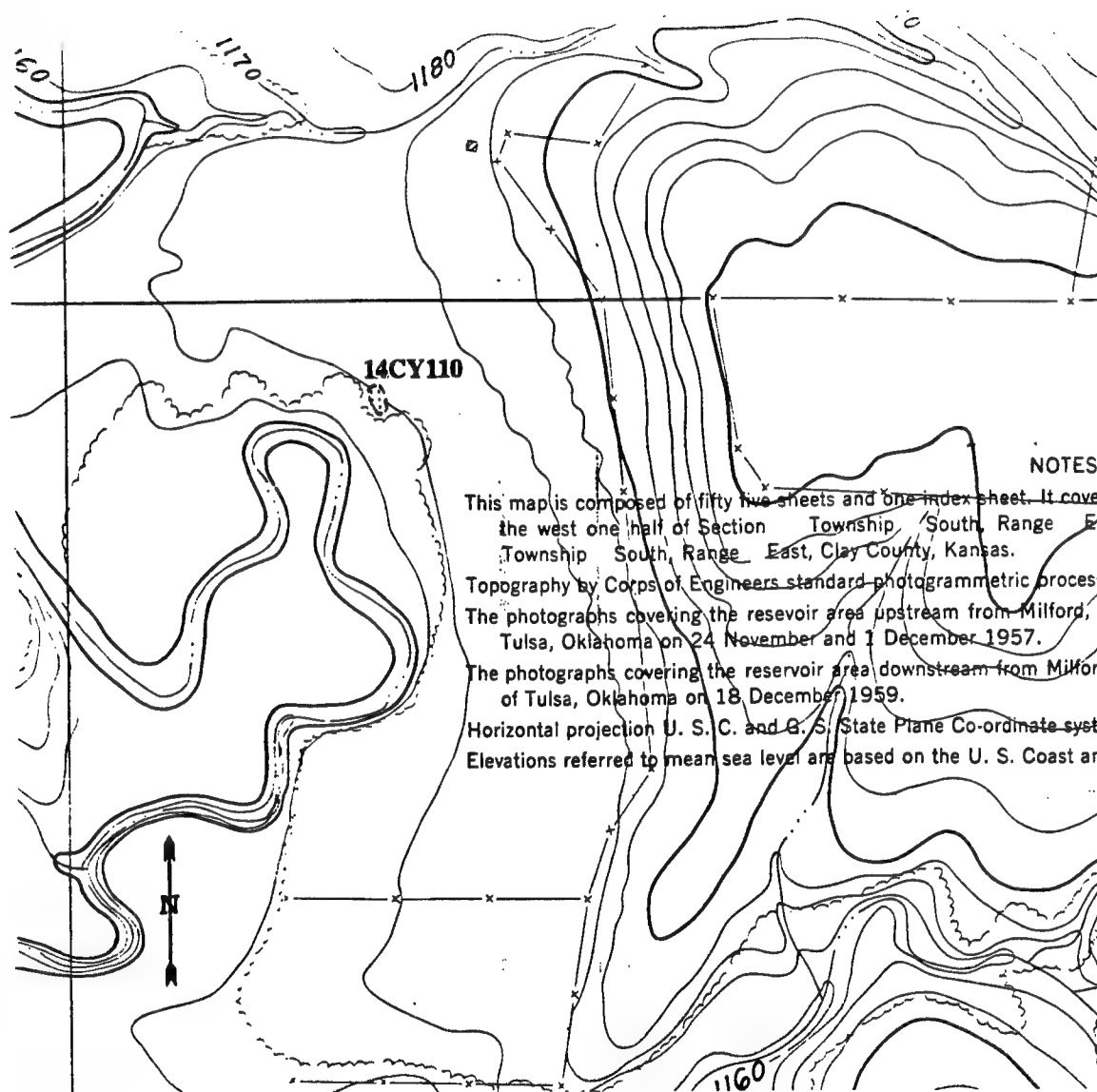


Figure 30: Map of Site 14CY110 (Scale: 1 inch = 400 feet)

## 14CY111

**Site Name:**

**Field No:** MC4

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Permian Limestone

**Drainage:** Mall Creek

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 21 x 2 m

**Surface Visibility:** 50%

**Slope:** 5-20%

**Ground Cover Vegetation:** Tallgrass prairie

**Survey Date:** 27 Sept 1993

**Land Use:** Wildlife area and water catchment channel

**Elevation:** 1240 ft amsl

### Site Description and Survey Results:

This lithic scatter, located on a high upland bluff on the west side of Mall Creek, was found along the bottom and north edge of a drainage ditch cut around the contour of the hilltop. Surveyors found the artifacts in what appeared to be washed sand; shovel tests revealed that this was a soil deposit across the hilltop. The numerous shovel tests in the hilltop above the ditch revealed no cultural material or other evidence of occupation.

Five sites have been recorded on the lower east bank of Mall Creek in the survey area: 14CY23, 14CY25, and 14CY42 to the north; and 14CY102 and 14CY57 to the south. Surveyors could not relocate 14CY23 or 14CY102.

### Cultural Material Collected:

14CY111-0-1 Utilized flake (1); Smoky Hill Jasper (1)  
14CY111-0-2 Tertiary flakes (3); Permian chert (2 heat-treated)  
14CY111-0-3 Shatter (1); Heat-treated Permian chert  
14CY111-0-4 Shatter (1); Quartz, white

### Observations, Interpretations and Recommendations:

The site appears to be a place where hunters shaped or re-worked previously manufactured stone tools, perhaps to perform a specific task (e.g. related to resource extraction). As it is so high and provides excellent views of the creek valley, the site could also have been a lookout.

The location of this site on a high upland knoll in a sandy soil relatively far from a river or stream makes it unusual in this area. Such upland areas also have the potential for the earliest occupations, as they are not subject to stream erosion or burial by alluvial deposits. However, as the ditching exposed a considerable area of surface and yet yielded few artifacts, and as numerous shovel tests revealed no artifacts or other evidence of occupation, further National Register testing (i.e. archaeological survey and subsurface testing) is not recommended.

Soil profile: 14CY111

----- 0 cm  
KIPSON-SOGN SILTY CLAY LOAMS,  
5-10% SLOPES  
loamy sand  
----- 25  
sand  
----- 60

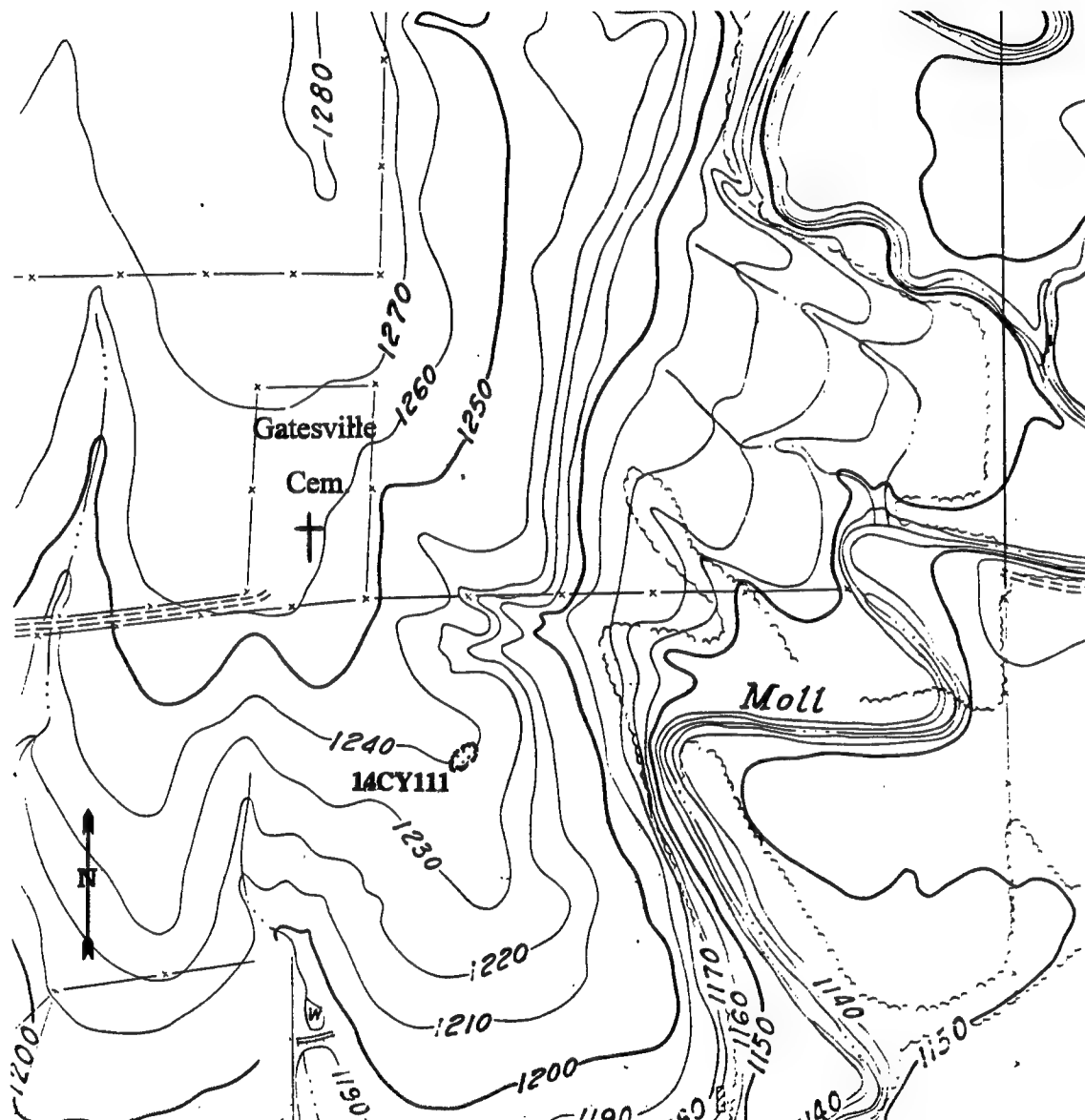


Figure 31: Map of Site 14CY111 (Scale: 1 inch = 400 feet)

**Site Name:** Gates Homestead  
**Field No:** MC5  
**Cultural Affiliation:** EuroAmerican  
**Topographic Setting:** Terrace  
**Parent Material:** Permian Limestone  
**Drainage:** Mall Creek  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** c. 1 acre  
**Surface Visibility:** 20%  
**Slope:** Nearly level  
**Ground Cover Vegetation:** Overgrown farmsite  
**Survey Date:** 28 Sept 1993  
**Land Use:** Public use  
**Elevation:** 1161 ft amsl

### **Site Description and Survey Results:**

This homestead is on a terrace on the west side of Mall Creek less than half a mile north of its mouth at Milford Lake. Rubble and foundations of limestone and concrete are overgrown with grass and weeds. Remains of a rippled cement floor lie in the north part of the site. Other structures include a plugged cement outhouse base, a windmill base, a concrete post and stone walls.

Numbered features on the site map are defined as follows:

- 1 - foundation corner
- 2 - rippled concrete floor
- 3 - windmill base
- 4 - 3 concrete floor fragments and one concrete corner pad
- 5 - concrete pad with limestone foundation wall extending from the NE corner
- 6 - retaining wall
- 7 - retaining wall
- 8 - cement pad toilet base
- 9 - foundation fragment
- 10 - limestone corner
- 11 - concrete silo base

No cultural material was collected.

### **Observations, Interpretations and Recommendations:**

The remnants of old limestone foundations, some with and some without mortar, as well as a great deal of cement and poured concrete foundations and pads including a cement base for a ceramic toilet, found on this site indicate a long period of construction from the later 19th through the mid 20th century. It is possible that the limestone foundations are the remains of the original homestead (recognizing that fieldstone and limestone construction, as a technique, cannot be directly dated).

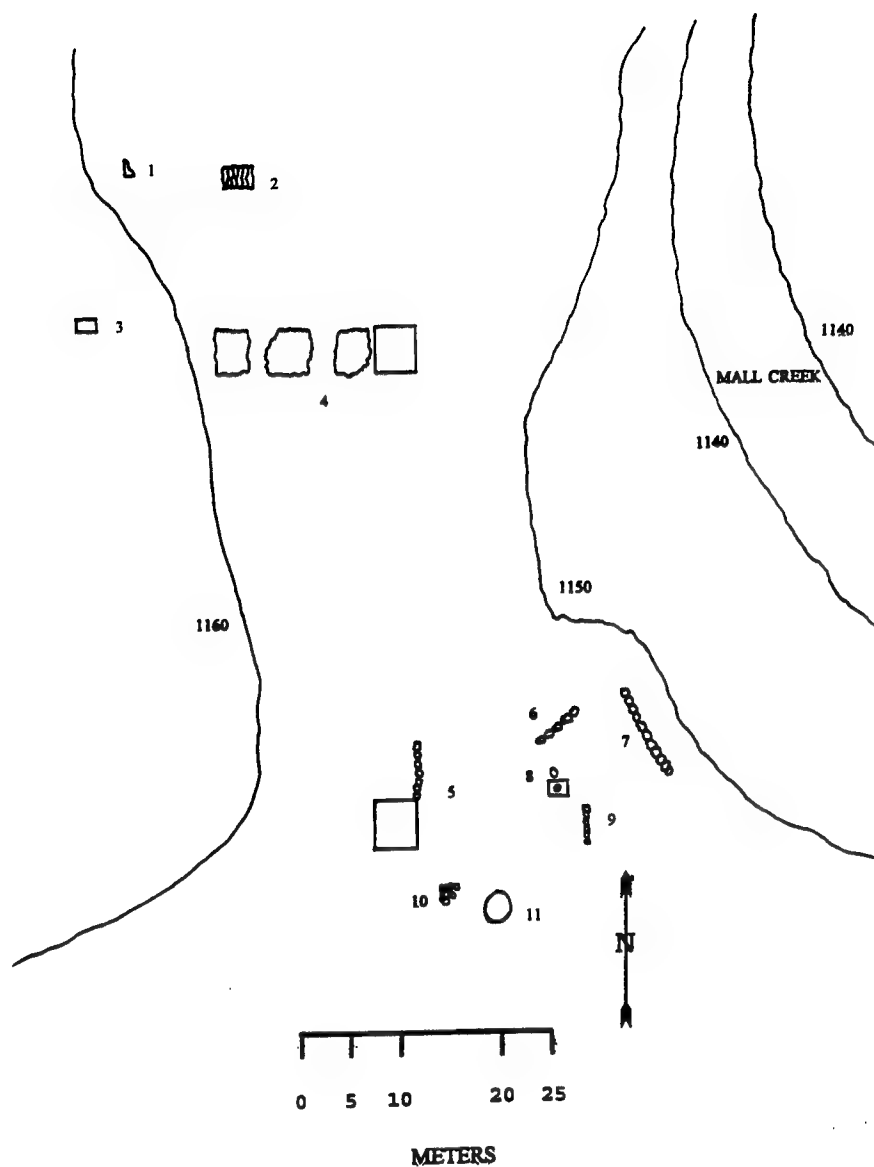
Courthouse records show that this was the homestead of Lorenzo Gates (Table A4), one the earliest settlers in Grant township, Clay county, who arrived in the fall of 1857 with John Gill. The first

marriage to take place in Clay county was that of Lorenzo Gates, then the first Postmaster on Mall Creek, and Lucinda Gill on December 18, 1859. Mr. Gates was appointed to the first Board of County Commissioners by the governor in 1866, served on the Grant Township Board in 1871 and 1872, and later served two terms in the Legislature (Kansas Board of Agriculture 1878:145).

After Lorenzo Gates died, his wife continued to live on the property for some years. In 1898, she transferred ownership to her daughter Martha Bradbury and her husband Marcus. By this time she was living in a limestone and log house built on property to the east across Mall creek acquired by Lorenzo in 1879. In 1906, their son William Bradbury obtained title. He added the farmstead to the north (14CY113) when he bought it from Jacob Nelson in 1923.

The survey results suggest that this site is locally significant because of its original occupant (Lorenzo Gates). However, since only a few foundation ruins appear to date from the original occupation and since their integrity is completely destroyed by the bulldozing of the site as part of the Milford Lake development and further eroded in the flooding of 1993, it is no longer of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).





Numbered features on the map of site 14CY112 are defined as follows:

- 1 - foundation corner
- 2 - rippled concrete floor
- 3 - windmill base
- 4 - 3 concrete floor fragments and one concrete corner pad
- 5 - concrete pad with limestone foundation wall extending from the NE corner
- 6 - retaining wall
- 7 - retaining wall
- 8 - cement pad toilet base
- 9 - foundation fragment
- 10 - limestone corner
- 11 - concrete silo base

Figure 32: Map of Site 14CY112

**Site Name:****Field No:** MC6**Cultural Affiliation:** EuroAmerican**Topographic Setting:** Flint Hills Upland**Parent Material:** Permian Limestone**Drainage:** Mall Creek**Recording Agency:** Archaeology Lab, USD**Site Size:** 2 acres**Surface Visibility:** 30%**Slope:** 5-20%**Ground Cover Vegetation:** Overgrown farm in woods**Survey Date:** 28 Sept 1993**Land Use:** Public use or fallow area N and E of fields**Elevation:** 1185 ft amsl**Site Description and Survey Results:**

This farmstead is at the southern end of the uplands on the west side of Mall Creek, approximately half a mile north of its entry into Milford Lake. It consists of a number of limestone and cement buildings (one completely intact) built against a low limestone bluff above Mall Creek. Extant garden plantings include cedars.

Numbered features on the site map are defined as follows:

- 1 - a limestone foundation 14 x 5 x 2+ m high built of 45 cm blocks against the limestone escarpment nearest creek. The original mortar is soft as was the tradition of the 19th century, but there is a modern cement cap on top of the foundation showing continued work on the structure. This foundation is open to the south, has a reinforcement in the middle of the north wall which may have been the base for a fireplace, and has a large block of limestone (2 m north of the south opening and 2 m above the ground) carved with the initials "EK"
- 2 - foundation
- 3 - limestone foundation
- 4 - a three by six meter cement plastered stone shed with two windows, a door and full cellar with cement steps and trap door
- 5 - an open well or cistern
- 6 - concrete octagonal well cap
- 7 - stone foundation with concrete pad at northwest corner
- 8 - stone barn foundation
- 9 - nine by five meter limestone house, with door and window openings partly intact, built northwest of a stone shed against a bank with an old stone wall

No cultural material was collected.

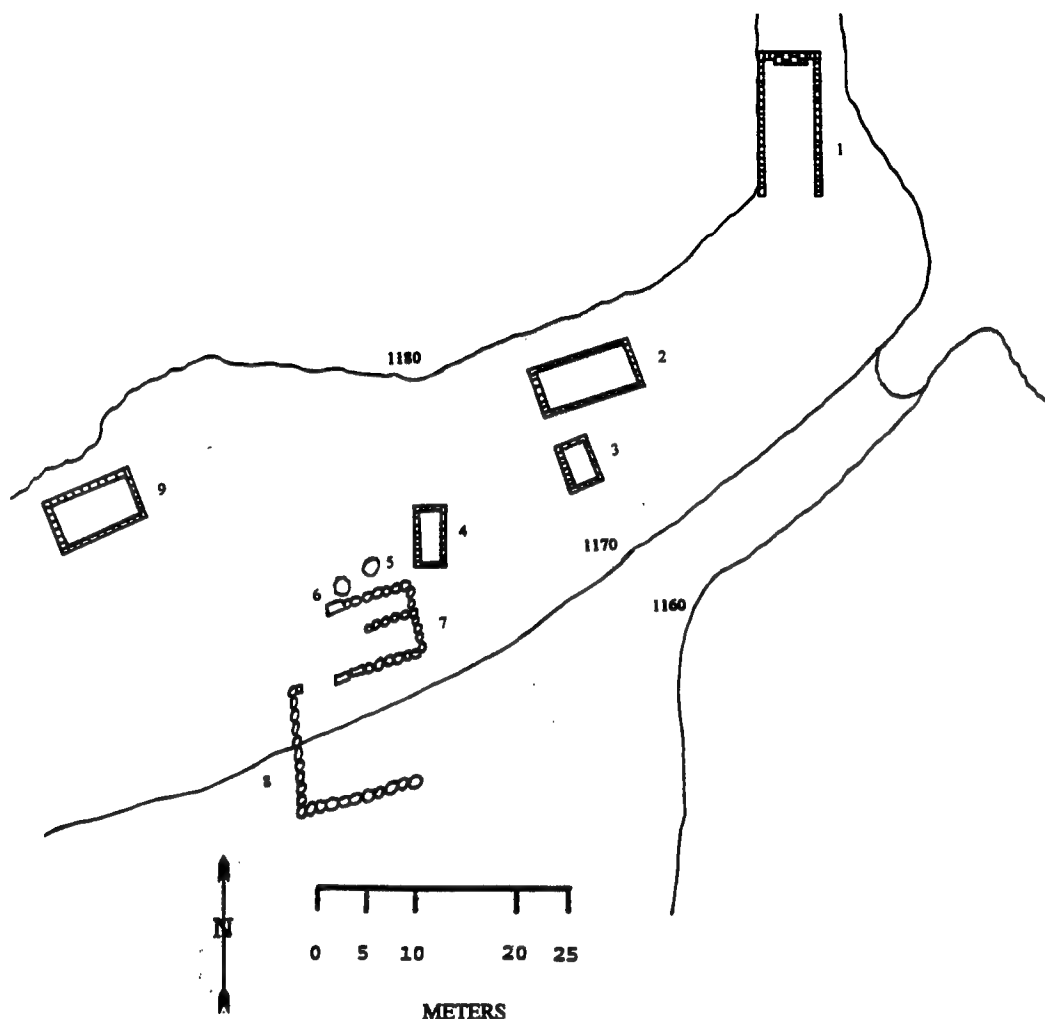
**Observations, Interpretations and Recommendations:**

This site contains a large number of limestone structures and foundations many constructed without mortar, others with locally made cement. These were probably built in the 1880s or 90s. The concrete structures, such as the poured cellar beneath the cement plastered stone shed, were later additions

sometime after the development of Portland cement in 1890. Such variety of construction methods is typical of the gradual developments and improvements made on a farm over time. However, some of these structures may have local or regional significance: the intact stone shed is of unusual (unique?) construction; and the limestone house, surviving up to door and window sills, resembles early limestone and log dwellings.

This 80 acre property was obtained from the K. P. Railway Co. by Horace L. Small in 1883. Ownership changed to Porter and Jennie Sargent in 1884, to Thomas and Mattie Birden in 1891 and finally to August F. Knauer in 1894 who, with his wife, owned the farm to 1903. Presumably a member of the Knauer family carved the initials 'E.K.' into the large foundation. This property was combined with 80 acres to the south in 1923 under William Bradbury, a grandson of Lorenzo and Lucinda Gates. His sons Clarence and Joe inherited the farm in 1931 (Table A5).

This site is significant as it is the only farmstead in the reservoir area that was not completely razed during the Milford Lake reservoir development in the early 1960s. As the site has intact and possibly significant architecture and is under threat from vandalism (through the removal of the remaining limestone walls for building material), it is recommended that the relative significance of the surviving buildings and their architecture be determined through further National Register testing.



Numbered features on the map of site 14CY113 are defined as follows:

- 1 - a limestone foundation 14 x 5 x 2+ m high built of 45 cm blocks against the limestone escarpment nearest creek. The original mortar is soft as was the tradition of the 19th century, but there is a modern cement cap on top of the foundation showing continued work on the structure. This foundation is open to the south, has a reinforcement in the middle of the north wall which may have been the base for a fireplace, and has a large block of limestone (2 m north of the south opening and 2 m above the ground) on carved with the initials "EK"
- 2 - foundation
- 3 - limestone foundation
- 4 - a three by six meter cement plastered stone shed with two windows, a door and full cellar with cement steps and trap door
- 5 - an open well or cistern
- 6 - concrete octagonal well cap
- 7 - stone foundation with concrete pad at northwest corner
- 8 - stone barn foundation
- 9 - nine by five meter limestone house, with door and window openings partly intact, built northwest of a stone shed against a bank with an old stone wall.

Figure 33: Map of Site 14CY113

## 14CY114

**Site Name:**  
**Field No:** MC7  
**Cultural Affiliation:** EuroAmerican  
**Topographic Setting:** Terrace  
**Parent Material:** Alluvium  
**Drainage:** Mall Creek  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** .5 acre  
**Surface Visibility:** 10%  
**Slope:** Nearly level  
**Ground Cover Vegetation:** Deciduous woods  
**Survey Date:** 28 Sept 1993  
**Land Use:** Public use  
**Elevation:** 1180 ft amsl

### **Site Description and Survey Results:**

This site, a hand-laid limestone well and nearby drywall structure, is on a terrace on the west side of Mall Creek approximately 1.5 miles north of its exit into Milford Lake and about 1 mile north of historic sites 14CY112 and 14CY113.

The well is 1.75 meters in diameter and is capped with a limestone slab. The wall consists of large roughcut, dry mortared limestone blocks. Surveyors searched the area carefully for evidence of other foundations but did not find any; and they did not observe or collect any other cultural material.

Numbered features on the site map are defined as follows:

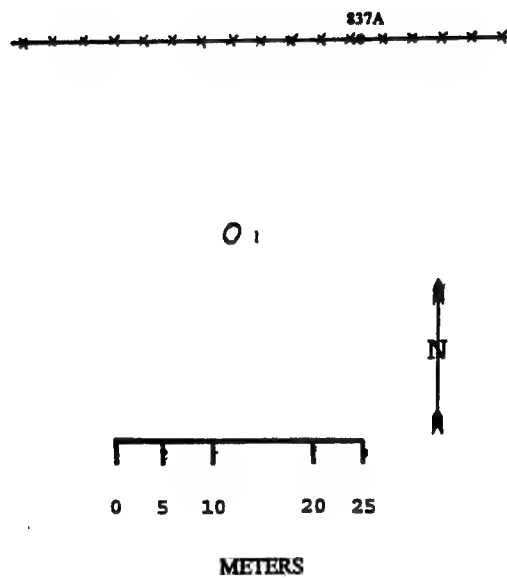
- 1 - limestone well

### **Observations, Interpretations and Recommendations:**

The hand-laid limestone well and roughcut, dry mortared limestone wall are probably of late 19th century construction. As a search of the area revealed no other cultural remains, it is likely that the well serviced the adjacent pasture. The function of the wall is unknown.

In 1861 the U.S. government granted patent for the property to John Butler. By 1884, title had passed to John M. Younkin who owned it until 1916. From 1919 to 1944 it belonged to F. W. Frauenfelder and then to the Dunham sisters, Mabel and Edna (Table A6). It is not known who built the well or the stone wall.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).



Numbered feature on the map of site 14CY114 is defined as follows:

1 - limestone well

Figure 34: Map of Site 14CY114

## 14CY115

**Site Name:**  
**Field No:** MC8  
**Cultural Affiliation:** EuroAmerican  
**Topographic Setting:** Floodplain  
**Parent Material:** Alluvium  
**Drainage:** Mall Creek  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** 16 sq meters  
**Surface Visibility:** 10%  
**Slope:** Nearly level floodplain along an upland drainage  
**Ground Cover Vegetation:** Deciduous woods and underbrush  
**Survey Date:** 26 Oct 1993  
**Land Use:** Public use  
**Elevation:** 1165 ft amsl

### Site Description and Survey Results:

A lime kiln is set into the south side of a stream bank of a west-flowing tributary of Mall Creek near its exit onto the floodplain. Only the glassed chimney (one meter diameter) remains of the kiln because the silicon in the soil fused into a greenish glass resulting from heat produced by the kiln. Viewed from above, from the top of the streambank, the kiln chimney resembles a hollow stump.

### Cultural Material Collected:

14CY115-0-1 Glassy lime kiln "chimney" chunks, 5  
14CY115-0-2 Crumbly lime kiln chunks, 6+

### Observations, Interpretations and Recommendations:

The kiln was used to reduce limestone to quicklime. The quicklime would then be slaked by mixing with water to make mortar for stonemasonry (Nickey 1979:74-75). It is on property obtained by patent in 1879 from the United States by Lorenzo Gates and owned by his descendants into the 1940s (Table A7). Mrs. Lucinda Gates, Lorenzo's widow, obtained control of the property in 1988 as evidenced by a quit claim deed. She lived in a house with part limestone, part log walls constructed on the east side of Mall Creek and south of this kiln (but not in the survey area) several decades into the 20th century. Perhaps mortar made from quicklime produced in this kiln was used in the construction of that house and some of the limestone structures at sites 14CY112 and 14CY113 just to the west across Mall Creek.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing) - unless such small kiln sites are regarded as having traditional cultural value in the region (cf. National Register Bulletin 38).

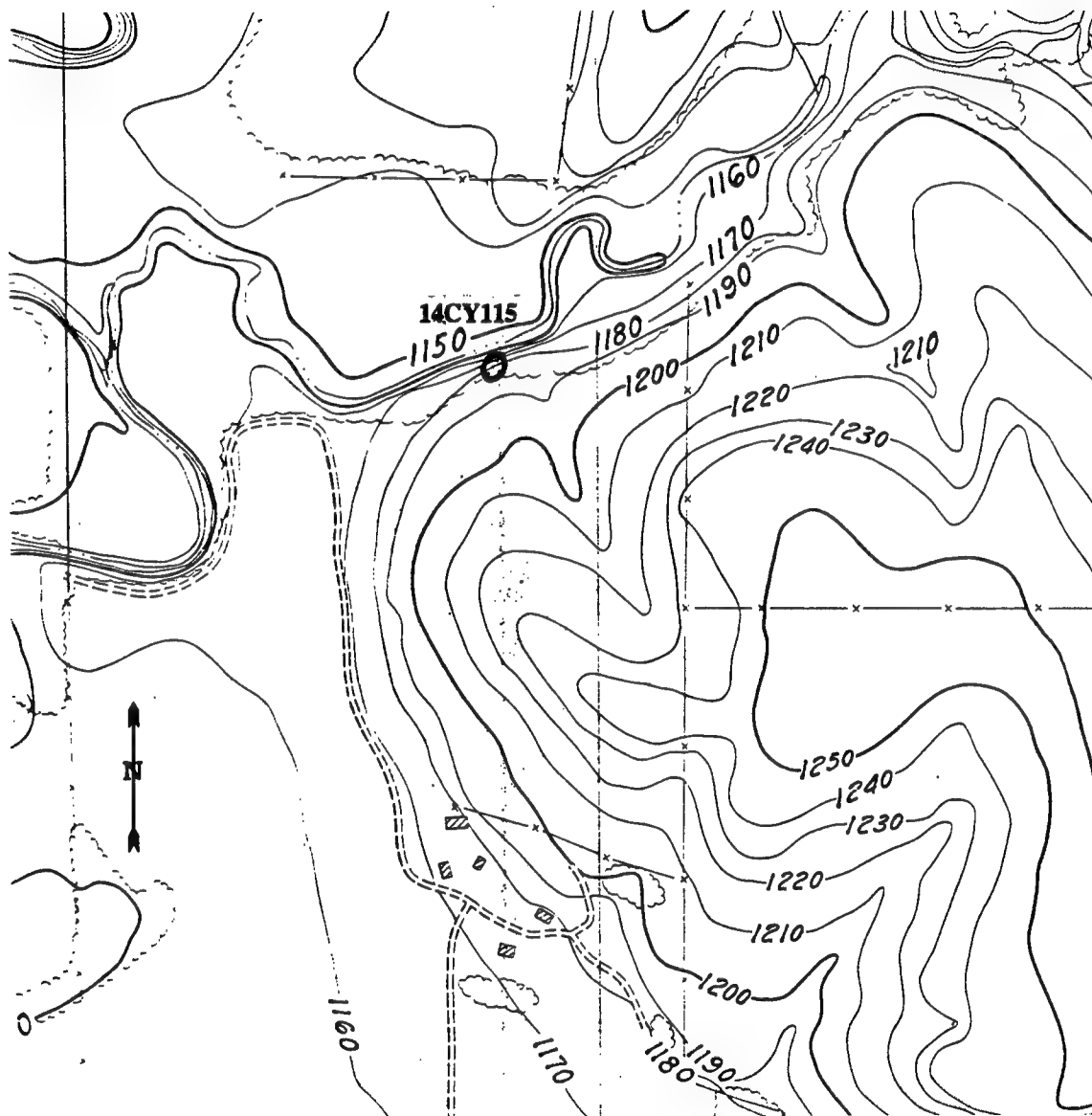


Figure 35: Map of Site 14CY115 (Scale: 1 inch = 400 feet)



## 14CY116

**Site Name:**

**Field No:** MC9

**Cultural Affiliation:** EuroAmerican

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Permian Limestone

**Drainage:** Mall Creek

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 25 sq meters

**Surface Visibility:** 10%

**Slope:** 5-10%

**Ground Cover Vegetation:** Deciduous woods and underbrush

**Survey Date:** 26 Oct 1993

**Land Use:** Public use

**Elevation:** 1180 ft amsl

### **Site Description and Survey Results:**

This site is a lime kiln in the uplands on the north bank of a west-flowing tributary of Mall Creek, approximately half a mile upstream from their junction. Its crumbling chimney is still visible in the south-facing stream bank, a large hole roughly three meters across and two meters deep. The marks of the shovel used to dig the kiln chimney can still be seen on the face of the hard-baked walls, which are over 20 cm thick. These walls slope in toward the chimney at the back in the creek bank. The walls to the front or creek side are more crumbly than the hard baked chimney wall where the heat was greater. A tree about one foot in diameter is growing in the bank behind the kiln.

### **Cultural Material Collected:**

14CY116-0-1 Very crumbly lime kiln "chimney" fragments, 20+

### **Observations, Interpretations and Recommendations:**

This lime kiln is larger than the one at site 14CY115, but apparently was not heated to as high a temperature because the dirt in the chimney did not become glass. The patent on this property was obtained by Duncan McBeth in 1879. He deeded it in 1898 to Marquis Potter who held it until 1918 when it became John Erickson's. Mr. and Mrs. Erickson held the land until 1952 (Table A8). It is not known who built and used the lime kiln. Mr. Potter's house is shown on the 1909 Atlas of Clay County.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing) - unless such small kiln sites are regarded as having traditional cultural value in the region (cf. National Register Bulletin 38).

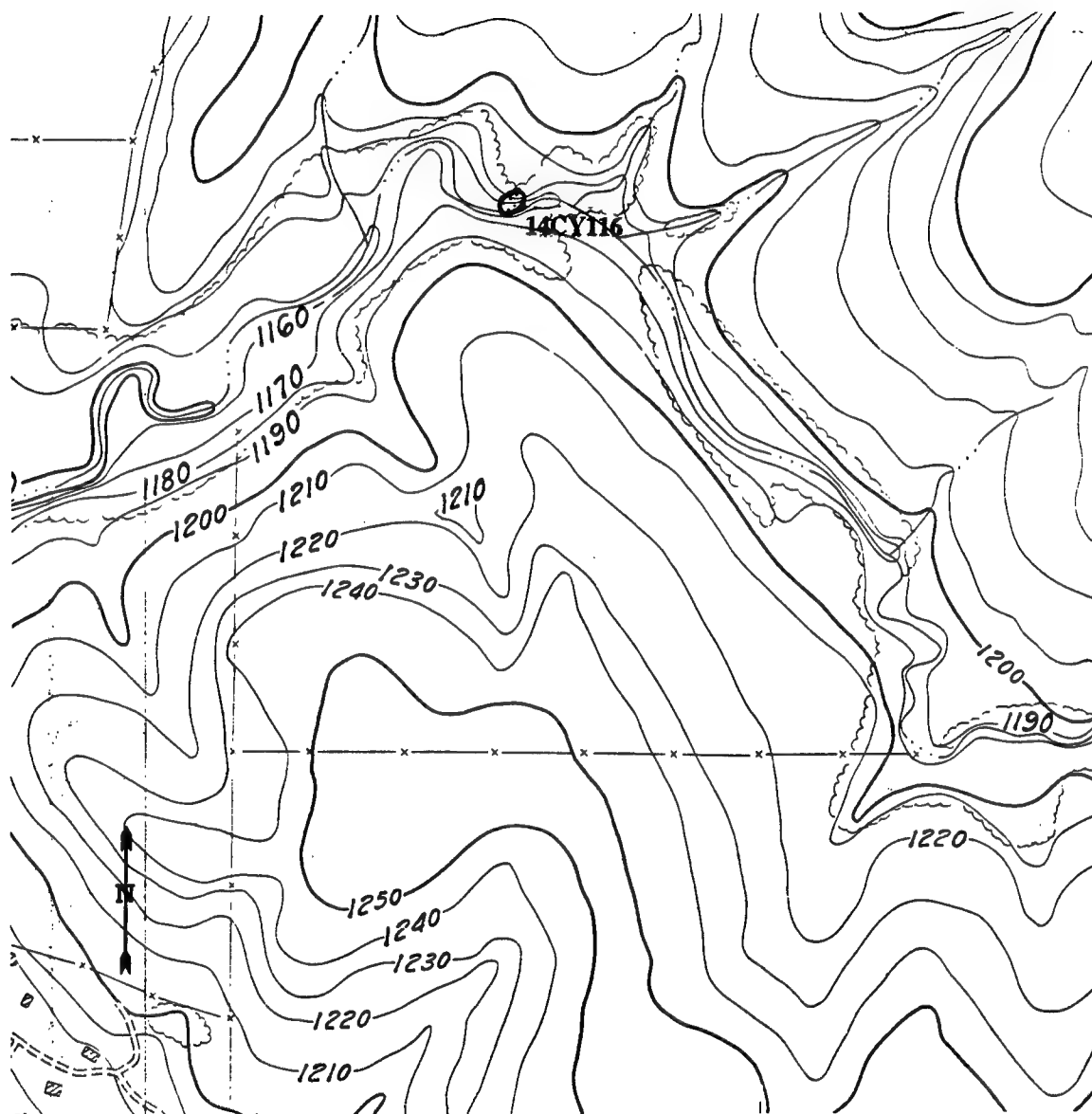


Figure 36: Map of Site 14CY116 (Scale: 1 inch = 400 feet)

## 14CY57

**Site Name:****Field No:** MC10**Cultural Affiliation:** Prehistoric**Topographic Setting:** Floodplain**Parent Material:** Alluvium**Drainage:** Mall Creek**Recording Agency:** Muller & Schock 1964**Site Size:** Undetermined**Surface Visibility:** 70%**Slope:** Nearly level**Ground Cover Vegetation:** Wheat stubble**Survey Date:** 26 Oct 1993**Land Use:** Cultivation**Elevation:** 1152 ft amsl**Site Description and Survey Results:**

This previously recorded lithic scatter is in sandy loam on the floodplain of the east side of Mall Creek half a mile north of Milford Lake. As the field had been cultivated and then eroded by the floods, surveyors were able to clearly assess the surface and shallow subsurface. Shovel tests did not reveal further cultural evidence.

There were four other prehistoric sites recorded previously on the east bank of Mall Creek in the survey area: 14CY23, 14CY25, 14CY42, and 14CY102, all to the north. Surveyors could not relocate 14CY23 or 14CY102.

14CY57 was reported by Muller and Schock (1964); its cultural affiliation was unknown.

**Cultural Material Collected:**

14CY57-0-1 Retouched flake (1); Permian chert

14CY57-0-2 Tertiary flakes (3); Permian chert

14CY57-0-3 Utilized secondary flake (1); Permian chert

14CY57-0-4 Shatter (1); Heat-treated Permian chert

**Observations, Interpretations and Recommendations:**

The material recovered in this revisit does not significantly enlarge understanding of the nature or age of the site. The lithics found in 1993 suggest that this is the site of knapping activity, perhaps later stages of stone tool manufacturing or repair, associated with food procurement activities along Mall Creek.

The lack of cultural material, the absence of subsurface cultural deposits, and the general loss of site integrity by agriculture and soil erosion suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

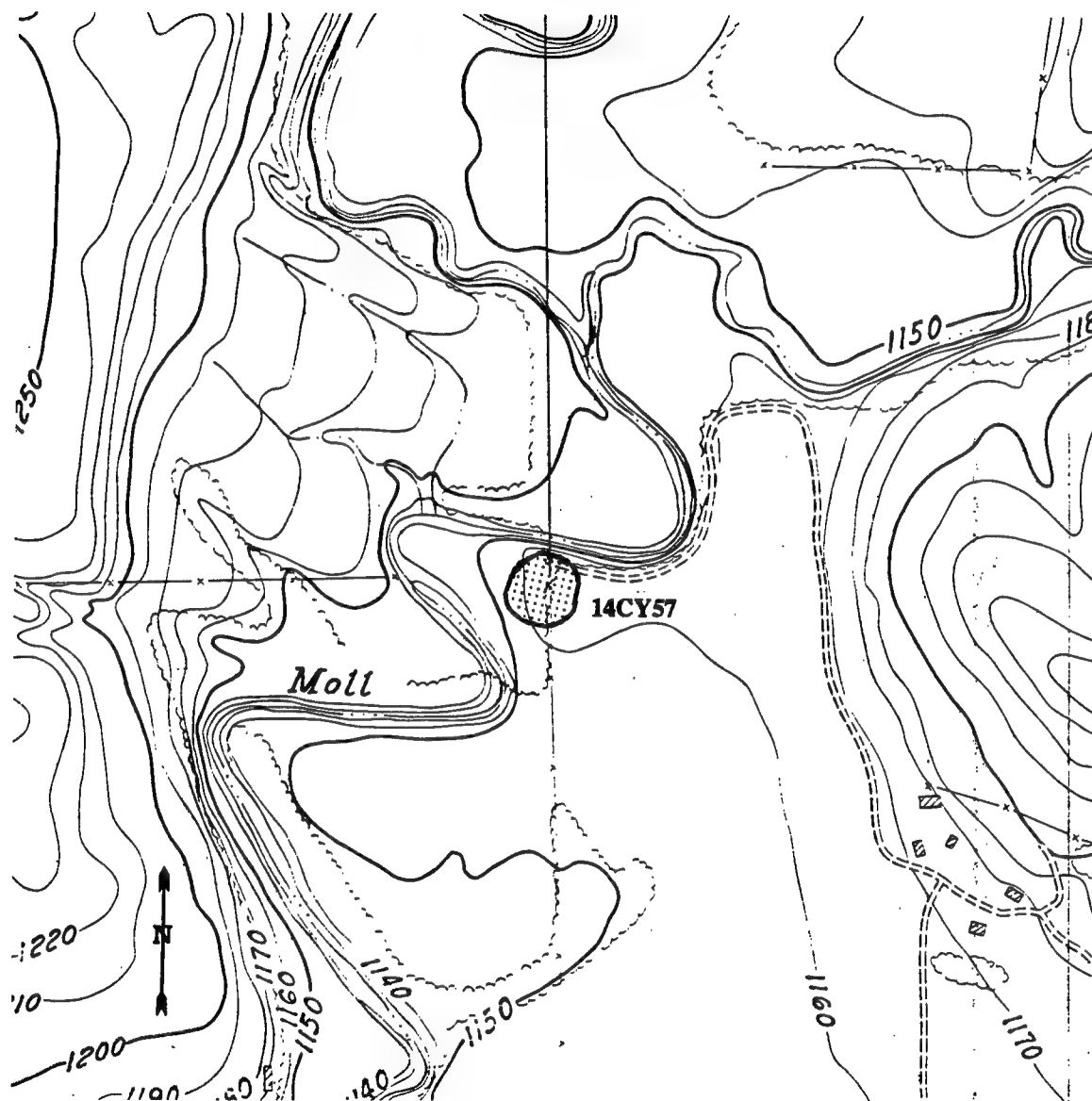


Figure 37: Map of Site 14CY57 (Scale: 1 inch = 400 feet)

## 14RY2150

**Site Name:**

**Field No:** TC1

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Shale

**Site Drainage:** Timber Creek

**Recording Agency:** Archaeology Lab, USD

**Site Size:** Spot Find

**Surface Visibility:** 50%

**Slope:** 4-8%

**Ground Cover Vegetation:** Tallgrass prairie

**Survey Date:** 29 Sept 1993

**Land Use:** Military maneuvers

**Elevation:** 366 m (1200 ft) amsl

**Site Description and Survey Results:**

This isolated flake was found in a tank rut along a tank road on a hillslope immediately above Timber Creek. The road runs from the valley into the uplands and has been heavily rutted on both margins by tanks. Site 14CY29 is located across Timber Creek 3/4 mile to the southwest. Surveyors were able to carefully examine the natural roadbed, the ditches, and the nearby creek cutbanks and conduct shovel tests beyond these margins; they found no additional cultural material or other evidence of occupation.

**Cultural Material Collected:**

14RY2150-0-1 Tertiary flake (1); Permian chert

**Observations, Interpretations and Recommendations:**

This site may represent a knapping area or a lost artifact - part of food procurement activities focussed on the Timber Creek valley.

The paucity of material alone suggests that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14RY2150

----- 0 cm  
CLIME-SOGN COMPLEX,  
5-20% SLOPES  
----- 8  
yellowish  
----- 60

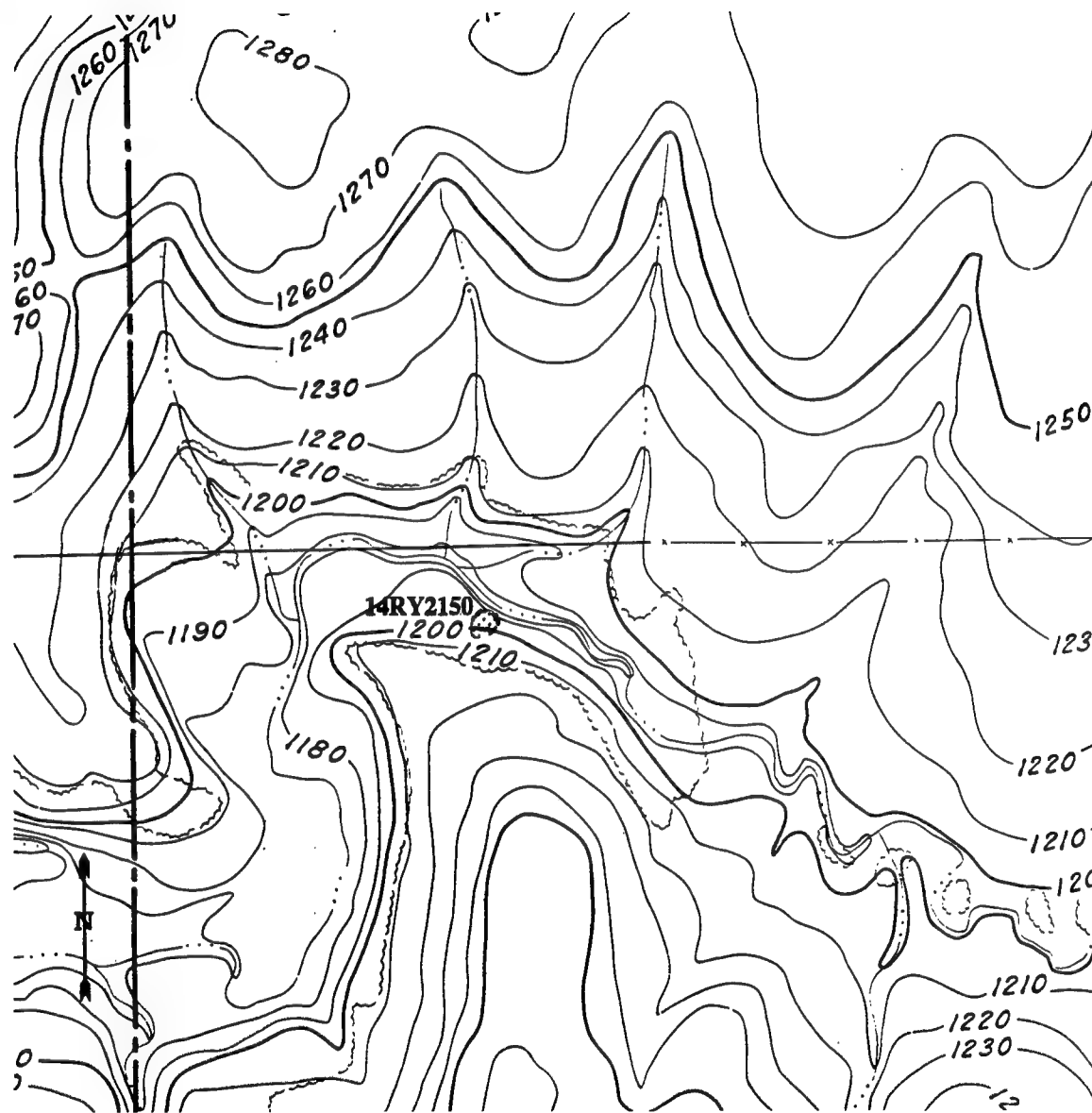


Figure 38: Map of Site 14RY2150 (Scale: 1 inch = 400 feet)

## 14CY117

**Site Name:**

**Field No:** TC2

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Timber Creek

**Recording Agency:** Archaeology Lab, USD

**Site Size:** Undetermined

**Surface Visibility:** 80%

**Slope:** 2-7%

**Ground Cover Vegetation:** Plowed field

**Survey Date:** 29 Sept 1993

**Land Use:** Cultivation

**Elevation:** 383 m (1257 ft) amsl

**Site Description and Survey Results:**

This lithic scatter is on the south side of a draw near the blufftop on the east side of Timber Creek. The site affords excellent views of the creek valley and efficient access to both the higher uplands and the creek. Surveyors found the scatter of flakes in a newly plowed field. Shovel tests in the field and its margins revealed no additional cultural material or evidence of occupation.

Sites 14RY2150 and 14RY2152 are nearby on the same side of the creek and site 14CY29 is located across the creek 3/4 mile to the southwest. Technically, this site is just outside of the survey area, but it is within the area of potential effect of any activity within the reservoir lands.

**Cultural Material Collected:**

14CY117-0-1 Retouched flake (1); Permian chert

14CY117-0-2 Tertiary flake (1); Permian chert

**Observations, Interpretations and Recommendations:**

This site may have been a briefly-occupied campsite (although no introduced rock was evident) or a knapping site associated with food procurement along Timber Creek.

The paucity of material, absence of visible subsurface deposits, and general loss of site integrity due to agriculture suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

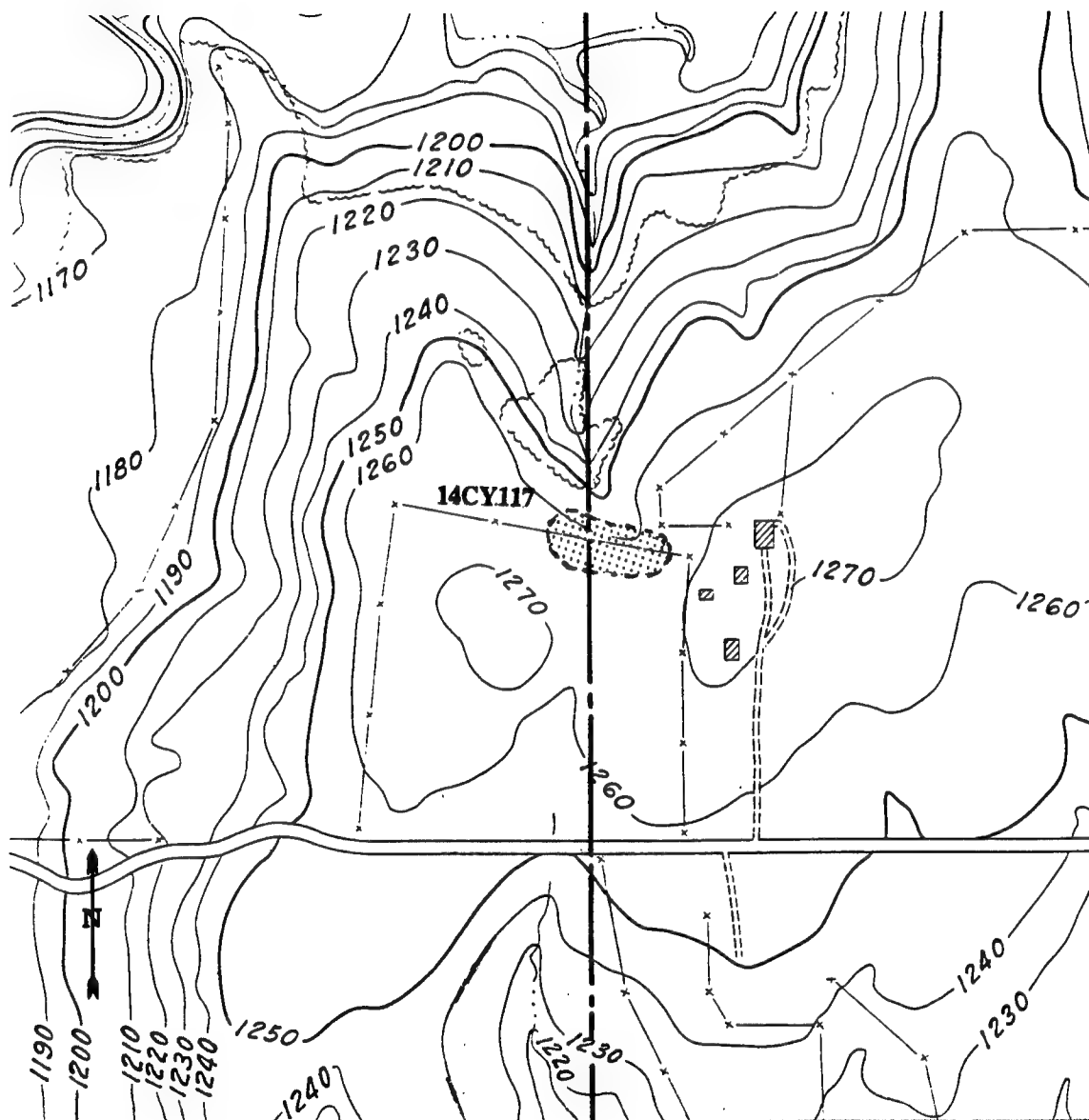


Figure 39: Map of Site 14CY117 (Scale: 1 inch = 400 feet)



## 14RY2152

**Site Name:**  
**Field No:** TC3  
**Cultural Affiliation:** Prehistoric  
**Topographic Setting:** Slope  
**Parent Material:** Permian Limestone  
**Drainage:** Republican River  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** Spot Find  
**Surface Visibility:** 50%  
**Slope:** 5-20%  
**Ground Cover Vegetation:** Tallgrass prairie  
**Survey Date:** 29 Sept 1993  
**Land Use:** Military maneuvers  
**Elevation:** 381 m (1250 ft) amsl

### Site Description and Survey Results:

This isolated find, a stone spokeshave, lay in a rut on the natural surface of a tank road across the uplands south of Timber Creek. Several parallel rows of tank tracks also cut deeply into the prairie on either side of the road, exposing a considerable area of ground surface. Shovel tests on both sides of the road failed to turn up any additional cultural material or evidence of occupation.

Sites 14RY2150 and 14CY117 are nearby on the same side of the creek. Site 14CY29 is located across the creek to the southwest.

### Cultural Material Collected:

14RY2152-0-1 Spokeshave/Knife (1); Produced on large tertiary flake; marginal retouch and notch on left lateral edge; retouch on dorsal surface, notched from ventral surface; Permian chert

### Observations, Interpretations and Recommendations:

This artifact may represent a lost or discarded tool - undoubtedly part of a pattern of resource activities along the Timber Creek valley.

The paucity of material alone suggests that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

### Soil profile: 14RY2152

----- 0 cm  
CLIME-SOGN COMPLEX,  
5-20% SLOPES  
----- 8  
yellowish  
----- 60

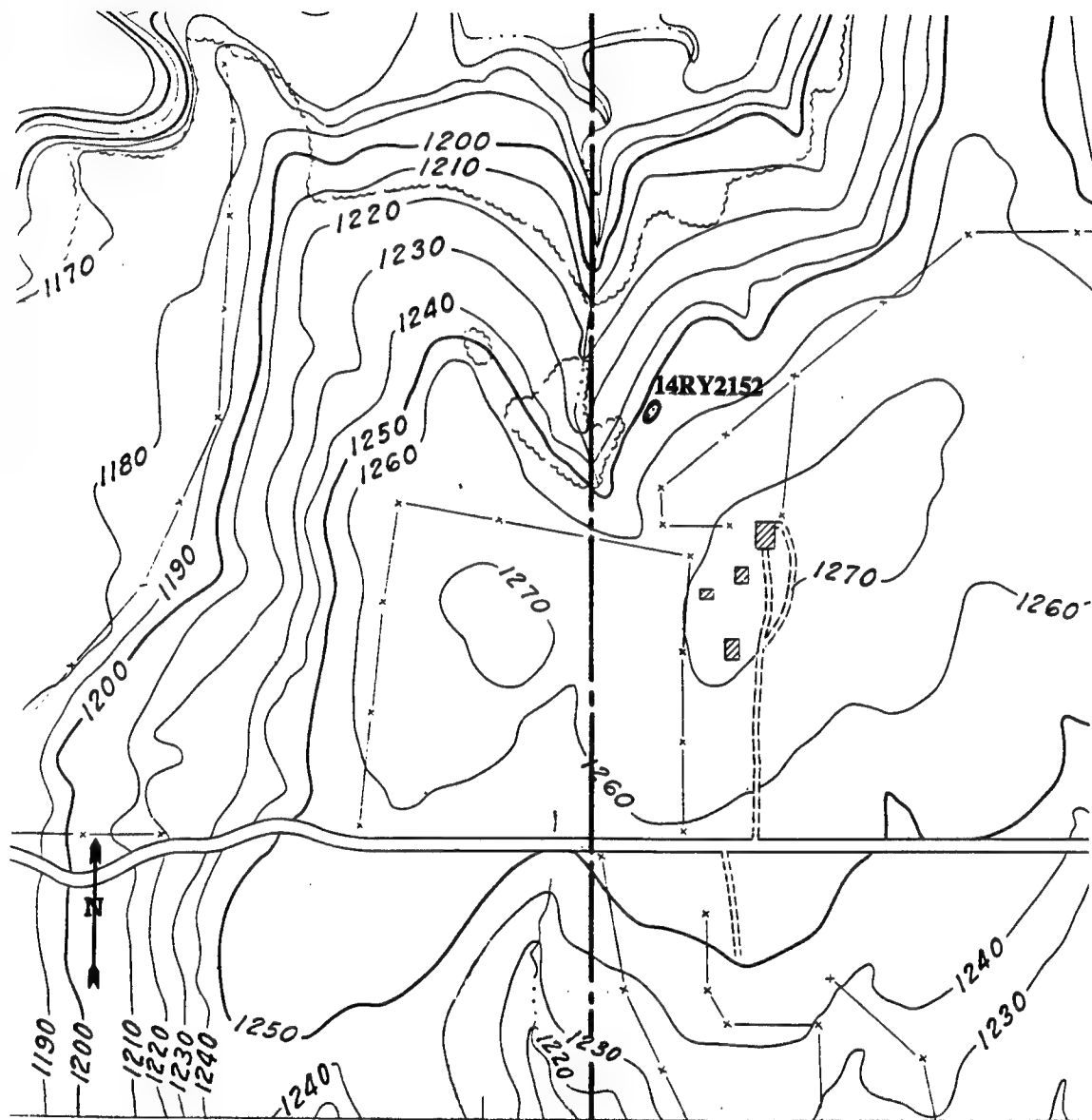


Figure 40: Map of Site 14RY2152 (Scale: 1 inch = 400 feet)

## 14GE1136

**Site Name:**

**Field No:** FC1

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Floodplain

**Parent Material:** Alluvium

**Drainage:** Farnum Creek

**Recording Agency:** Archaeology Lab, USD

**Site Size:** Undetermined

**Surface Visibility:** 70%

**Slope:** 1%

**Ground Cover Vegetation:** Cornstalk stubble and weeds

**Survey Date:** 5 Oct 1993

**Land Use:** Cultivation

**Elevation:** 356 m (1168 ft) amsl

### Site Description and Survey Results:

This lithic scatter is on the floodplain on the east side of Farnum Creek, on a low meander ridge in a flood-scoured plowed field. The flakes were scattered in two areas: along the south (foot) of the L-shaped field; and north (in the leg) to the two-track section road and extending west across the fenceline. No introduced rock (e.g. fire-cracked rocks) was evident. Surveyors also found several small historic ceramic fragments. Shovel tests did not reveal any additional cultural material or other evidence of occupation.

### Cultural Material Collected:

- 14GE1136-1-1 Utilized core (1); Expended core, heavily utilized on most available edges; Heat-treated Permian chert
- 14GE1136-1-2 Bifacially retouched flake (1); Bi-directional retouch on all margins; Permian chert
- 14GE1136-1-3: Bifacial Artifact Fragment with Beveled Edge (1) (Figure 41). This small bifacial fragment is flat on both faces. Large, shallow flake scars on both faces were made when the artifact was more complete. The single unbroken edge is beveled as a result of systematic trimming on one face. Dimensions: 34 mm, maximum dimension of fragment; 8 mm, thickness. Permian chert; Glossy sheen suggests heat- treatment but no discoloration
- 14GE1136-1-4 Retouched chunk/scrapper (1); Steep, limited marginal retouch on one margin; most of piece is unmodified; Cortex shows a pebble-sized piece - ad hoc tool, backed w/ cortex; Permian chert
- 14GE1136-1-5 Spokeshave (1); Limited marginal retouch; most of piece unmodified; Remaining cortex shows a pebble-sized piece - expedient tool, backed with cortex; Permian chert
- 14GE1136-1-6 Tertiary flakes (2); Permian chert
- 14GE1136-1-7 Shatter (7); Permian chert
- 14GE1136-2-1 Utilized flake (1); Permian chert
- 14GE1136-2-2 Shatter (5); Permian chert
- 14GE1136-2-3 Retouched flakes (3); Minimal retouch; Permian chert
- 14GE1136-2-4 Tertiary flake (1); Light gray Permian chert
- 14GE1136-2-5 Tertiary flake (1); Gray Permian chert
- 14GE1136-2-6 Shatter (1); Smoky Hill Jasper
- 14GE1136-3-3 Tertiary flake (1); Light gray Permian chert

14GE1136-3-4 Tertiary flakes (5); Gray Permian chert  
14GE1136-3-5 Core (1); Heat-treated Permian chert

**Observations, Interpretations and Recommendations:**

The nature and range of the lithic material (ie. from cores to tertiary flakes) indicate that complete lithic processing took place here: cores appear to have been heat-treated and used to produce flakes, some of which were processed into tools. The absence of introduced rock or subsurface deposits suggests that this was probably not a large or heavily-used campsite, but rather, as its lithic material suggests, a chert processing site.

The relative lack of material, the absence of visible subsurface deposits, and the general loss of site integrity due to agriculture and flood damage suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

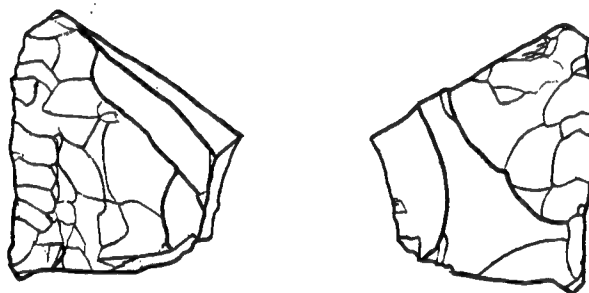


Figure 41: Bifacial artifact fragment.

Soil profile: 14GE1136

----- 0 cm  
HOBBS SILT LOAM  
brownish  
----- 9  
yellowish, more  
intense with depth  
----- 50

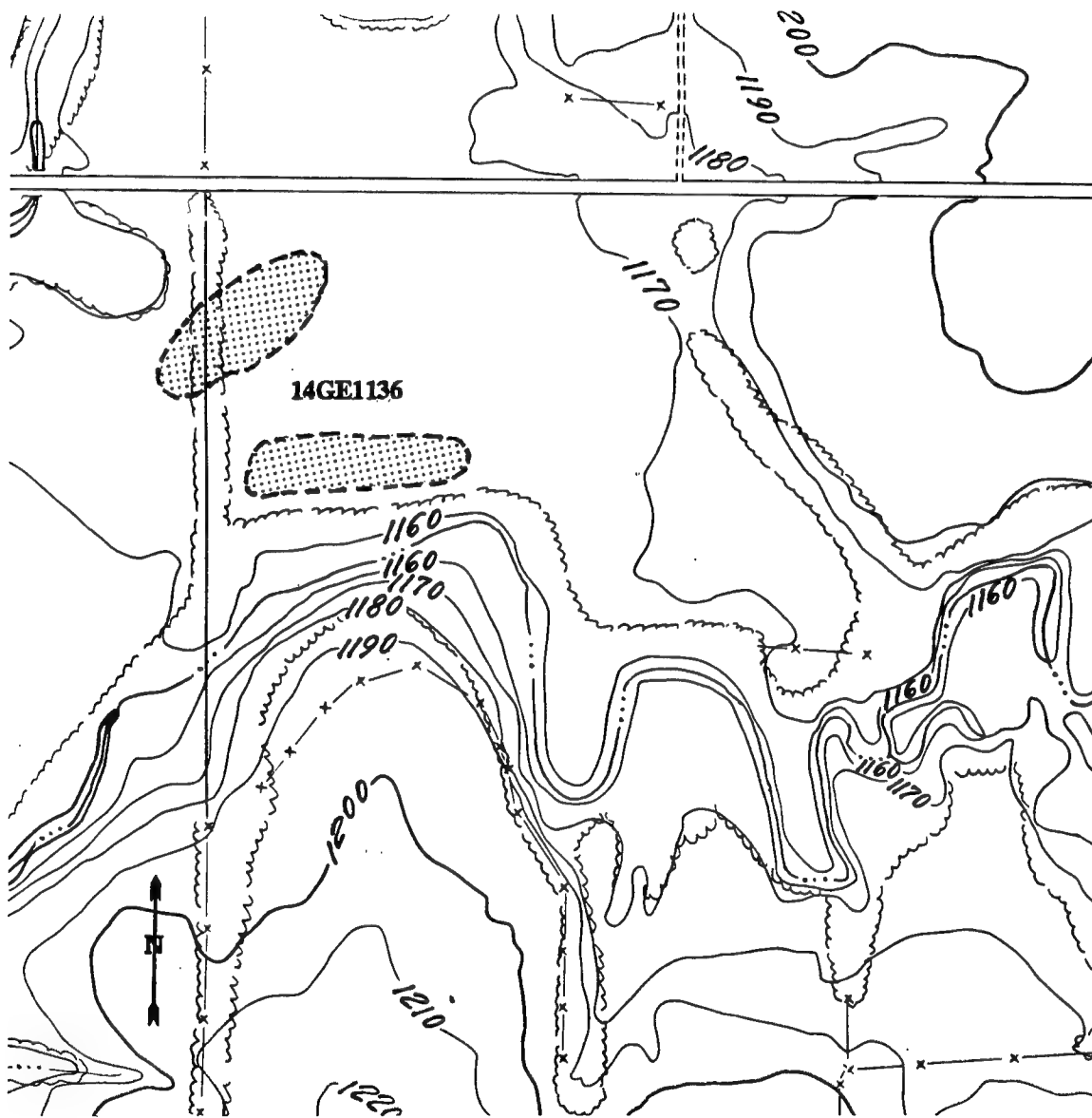


Figure 42: Map of Site 14GE1136 (Scale: 1 inch = 400 feet)

**Site Name:**  
**Field No:** FC2  
**Cultural Affiliation:** Prehistoric  
**Topographic Setting:** Floodplain  
**Parent Material:** Alluvium  
**Drainage:** Farnum Creek  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** 100 x 50 m  
**Surface Visibility:** 70%  
**Slope:** Nearly level  
**Ground Cover Vegetation:** Flood-scoured plowed field  
**Survey Date:** 5 Oct 1993  
**Land Use:** Cultivation  
**Elevation:** 356 m (1168 ft) amsl

#### **Site Description and Survey Results:**

This lithic scatter is on subtle rises in the floodplain that trace old meanders on the east side of Farnum Creek north of the section road. As surveyors found the material in a cultivated, eroded field, they were able to efficiently assess the surface and shallow subsurface. There was no introduced rock (e.g. fire-cracked rock) in the area. Shovel tests failed to reveal additional cultural material or other evidence of occupation.

#### **Cultural Material Collected:**

14GE1137-0-1 Core (1); Permian chert  
 14GE1137-0-2 Shatter (1); Gray, banded Permian chert  
 14GE1137-0-3 Shatter (8); Light gray Permian chert  
 14GE1137-0-4 Tertiary flake (1); Heat-treated Permian chert  
 14GE1137-0-5 Utilized flake (1); Permian chert  
 14GE1137-0-6 Retouched flake (1); Marginal retouch on right lateral edge; Permian chert  
 14GE1137-0-7 Retouched flake fragment (1); Marginal retouch on left lateral edge; Broken after retouch; Permian chert  
 14GE1137-0-8 Retouched flake (1); Marginal retouch on left lateral edge; Heat-treated Permian chert

#### **Observations, Interpretations and Recommendations:**

The location of this small lithic scatter suggests a brief occupation at the edge of an old stream meander. It is a possible flintknapping and heat-treatment site. Cores may have been heat-treated and used to produce flakes or tools. Advanced knapping stages suggest tool finishing.

The relative lack of material, the absence of visible subsurface deposits, and the general loss of site integrity due to agriculture and flood erosion suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14GE1137

----- 0 cm  
HOBBS SILT LOAM  
brownish  
----- 15  
yellowish, getting more  
visible with depth  
----- 50

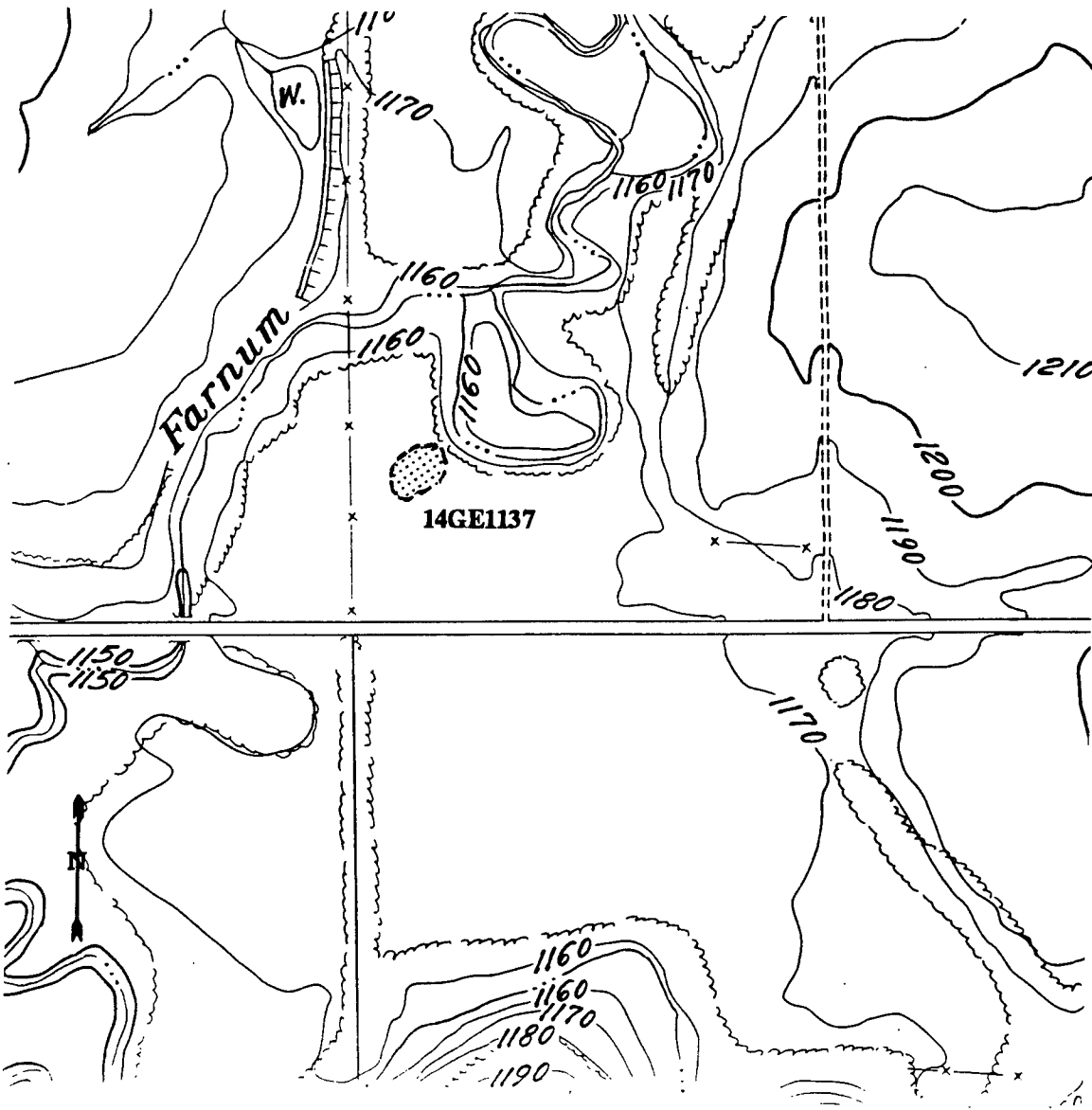


Figure 43: Map of Site 14GE1137 (Scale: 1 inch = 400 feet)

**Site Name:**  
**Field No:** FC3  
**Cultural Affiliation:** Prehistoric  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Loess  
**Drainage:** Farnum Creek  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** 50 x 50 m  
**Surface Visibility:** 70%  
**Slope:** 4-8%  
**Ground Cover Vegetation:** Recently flooded soybeans  
**Survey Date:** 5 Oct 1993  
**Land Use:** Cultivation  
**Elevation:** 357 m (1171 ft) amsl

#### **Site Description and Survey Results:**

This lithic scatter is on a knoll on the floodplain of the north side of Farnum Creek. A tributary of the creek forms the north and east limits of the site. Shovel tests did not reveal any additional cultural material or other evidence of occupation.

#### **Cultural Material Collected:**

14GE1138-0-1 Unmodified long bone fragment (1) (unidentified mammal)  
 14GE1138-0-2 Retouched chunk/ad hoc scraper (1); Steep marginal retouch on one edge, unmodified otherwise; Permian chert  
 14GE1138-0-3 Shatter (8); Permian chert

#### **Observations, Interpretations and Recommendations:**

The nature and range of the lithics suggest that this was a flintknapping site associated with food procurement (hence the bone fragment) along Farnum Creek.

The lack of material, the absence of visible subsurface deposits, and the general loss of site integrity due to agriculture and flood erosion suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14GE1138

----- 0 cm  
 CRETE SOILS, SEVERELY ERODED  
 dark gray silty clay  
 ----- 21  
 dark gray to brown  
 silty clay  
 ----- 60



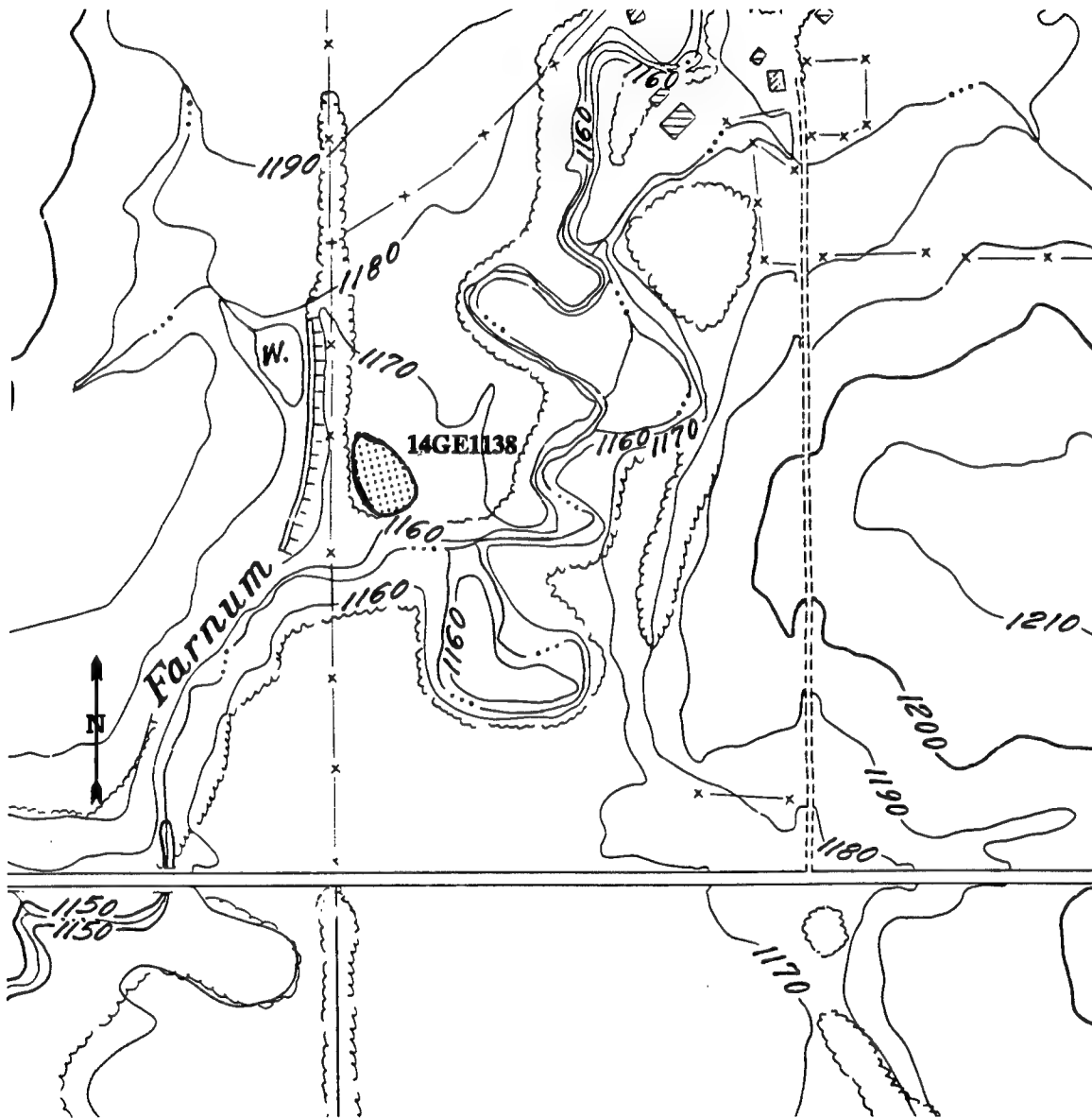


Figure 44: Map of Site 14GE1138 (Scale: 1 inch = 400 feet)

**Site Name:**  
**Field No:** FC4  
**Cultural Affiliation:** Prehistoric  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Loess  
**Drainage:** Farnum Creek  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** 50 x 25 m  
**Surface Visibility:** 40%  
**Slope:** 4-8%  
**Ground Cover Vegetation:** Milo  
**Survey Date:** 5 Oct 1993  
**Land Use:** Cultivation  
**Elevation:** 364 m (1194 ft) amsl

#### **Site Description and Survey Results:**

This lithic scatter is on a southeast-facing slope on the Farnum Creek floodplain in a cultivated field adjacent to a small cluster of cottonwood trees. A limestone fence borders the creek south of the site. The field has been heavily terraced. Shovel tests did not reveal any additional cultural material or other evidence of occupation.

#### **Cultural Material Collected:**

14GE1139-0-1 Bifacial thinning flake (1); Permian chert  
 14GE1139-0-2 Secondary flake (1); Permian chert  
 14GE1139-0-3 Tertiary flake (1); Permian chert

#### **Observations, Interpretations and Recommendations:**

This is a minor flintknapping site likely representing a brief occupation associated with food resource procurement along Farnum Creek.

The lack of material, the absence of visible subsurface deposits, and the general loss of site integrity due to agriculture and flood erosion suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14GE1139

----- 0 cm  
 CRETE SILTY CLAY LOAM,  
 4-8% SLOPES  
 plow zone - dark grayish  
 brown, silty clay  
 ----- 42  
 gray clay  
 ----- 60

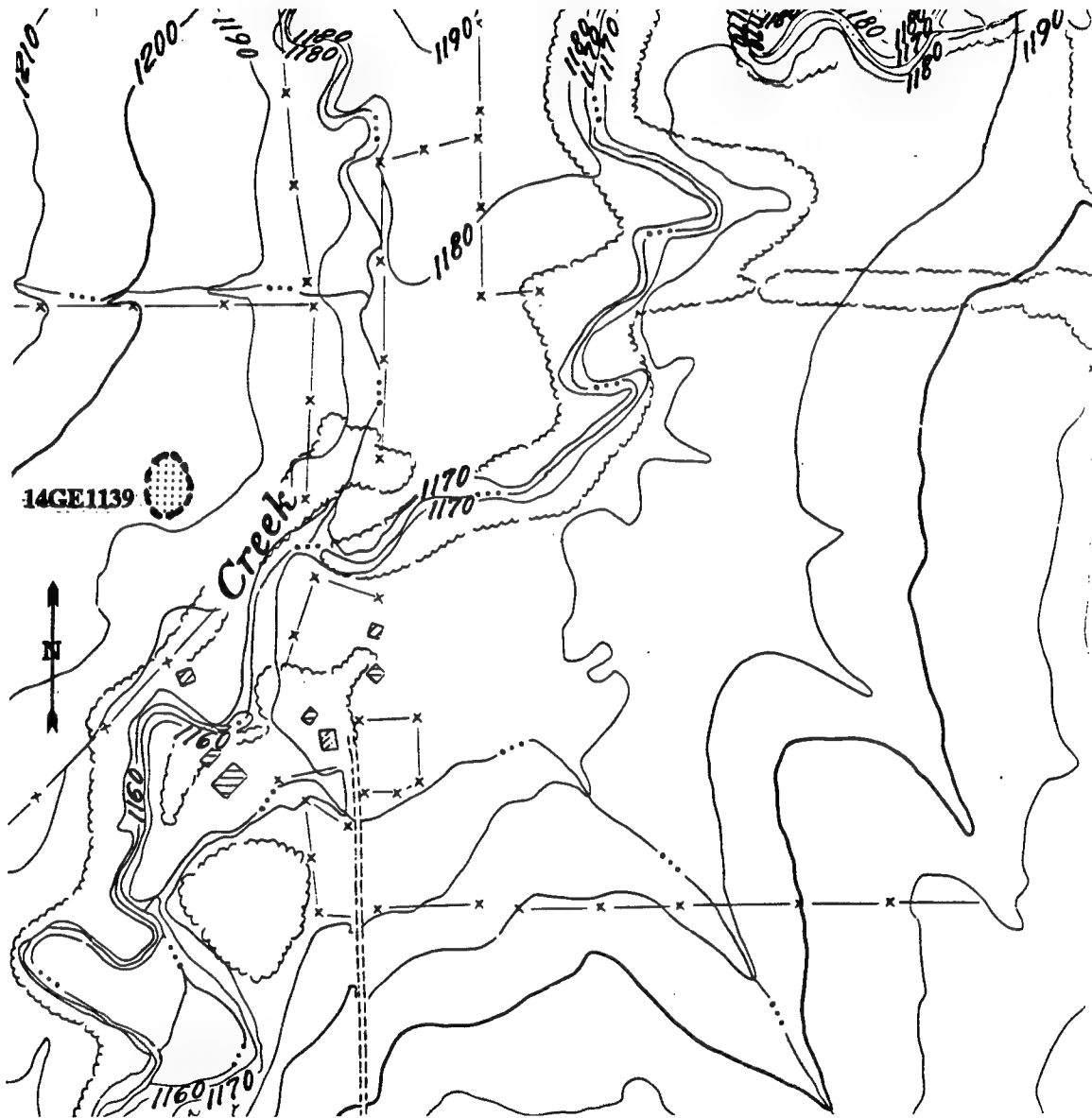


Figure 45: Map of Site 14GE1139 (Scale: 1 inch = 400 feet)

**Site Name:**  
**Field No:** FC5  
**Cultural Affiliation:** Prehistoric  
**Topographic Setting:** Floodplain  
**Parent Material:** Alluvium  
**Drainage:** Farnum Creek  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** 50 x 25 m  
**Surface Visibility:** 50%  
**Slope:** 1%  
**Ground Cover Vegetation:** Flood scoured land  
**Survey Date:** 6 Oct 1993  
**Land Use:** Cultivation  
**Elevation:** 360 m (1181 ft) amsl

**Site Description and Survey Results:**

This lithic scatter was found in a cultivated field on the floodplain on the west side of Farnum Creek, on a narrow finger of land between Farnum Creek and a dry tributary. Surveyors also found several small historic ceramic fragments. Shovel tests did not reveal any additional cultural material or other evidence of occupation.

**Cultural Material Collected:**

14GE1140-0-2 Retouched chunks (3); Limited marginal retouch, unmodified otherwise; Ad hoc tools-natural pieces showing minimal work; Permian chert  
 14GE1140-0-3 Secondary flake (1); Permian chert  
 14GE1140-0-4 Tertiary flakes (4); Permian chert

**Observations, Interpretations and Recommendations:**

The nature and range of the lithics suggest that the site was used for flintknapping, likely associated with food procurement along Farnum Creek.

The lack of material, absence of visible subsurface deposits, and the general loss of site integrity due to agriculture and flood erosion suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

**Soil profile: 14GE1140**

----- 0 cm  
 HOBBS SILT CLAY LOAM  
 plow zone - dark gray,  
 silty clay  
 ----- 18  
 grayish brown, loamy  
 alluvium clay  
 ----- 38

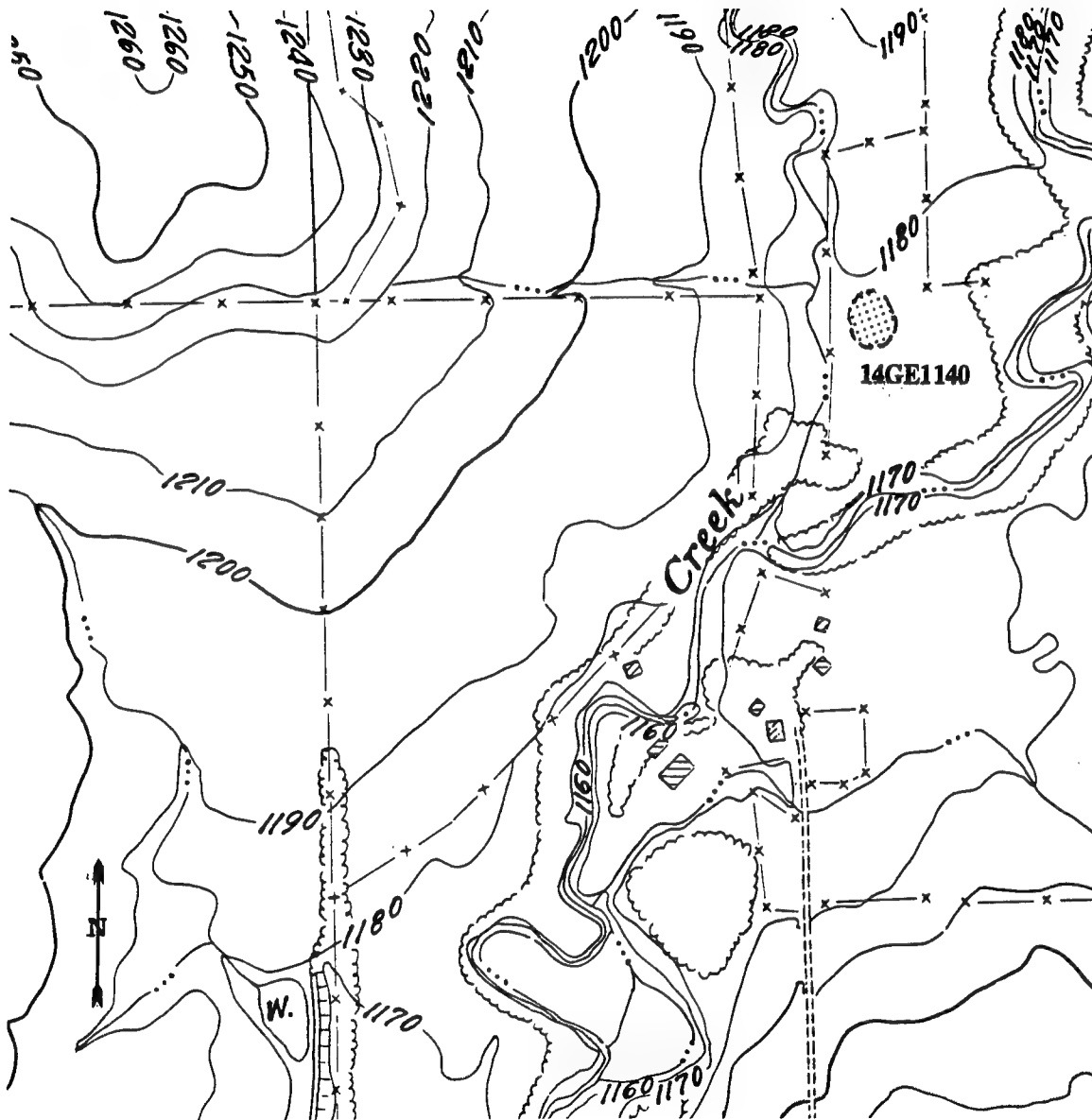


Figure 46: Map of Site 14GE1140 (Scale: 1 inch = 400 feet)

**Site Name:**  
**Field No:** FC6  
**Cultural Affiliation:** EuroAmerican  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Permian Limestone  
**Drainage:** Farnum Creek  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** 2.5 acres of structures visible  
**Surface Visibility:** 30%  
**Slope:** 0-8%  
**Ground Cover Vegetation:** Overgrown farm, prairie plants  
**Survey Date:** 6 Oct 1993  
**Land Use:** Military maneuvers and public use  
**Elevation:** 360 m (1181 ft) amsl

**Site Description and Survey Results:**

This farmstead site is on uplands on the east side of Farnum Creek. It consists of a small limestone bridge and seven associated farm foundations. Limestone and concrete foundations, stone walls and rubble remain. The bridge has a decaying wooden road bed across limestone and concrete supports.

Numbered features on the site map are defined as follows:

- 1 - limestone fence with rubble piled along N edge
- 2 - concrete plastered limestone foundation connected to limestone fence at NE corner
- 3 - circular depression filled with rubble
- 4 - limestone and concrete foundation
- 5 - limestone and concrete foundation
- 6 - concrete plastered limestone foundation wall
- 7 - limestone foundation walls
- 8 - limestone rubble pile
- 9 - limestone rubble pile
- 10 - house mound with a limestone wall and rubble pile on E edge
- 11 - house depression with limestone walls
- 12 - limestone lined well with concrete vaulted structure above
- 13 - squared limestone bridge with wooden deck, a rock wall extends N from the NW corner

**Cultural Material Collected:**

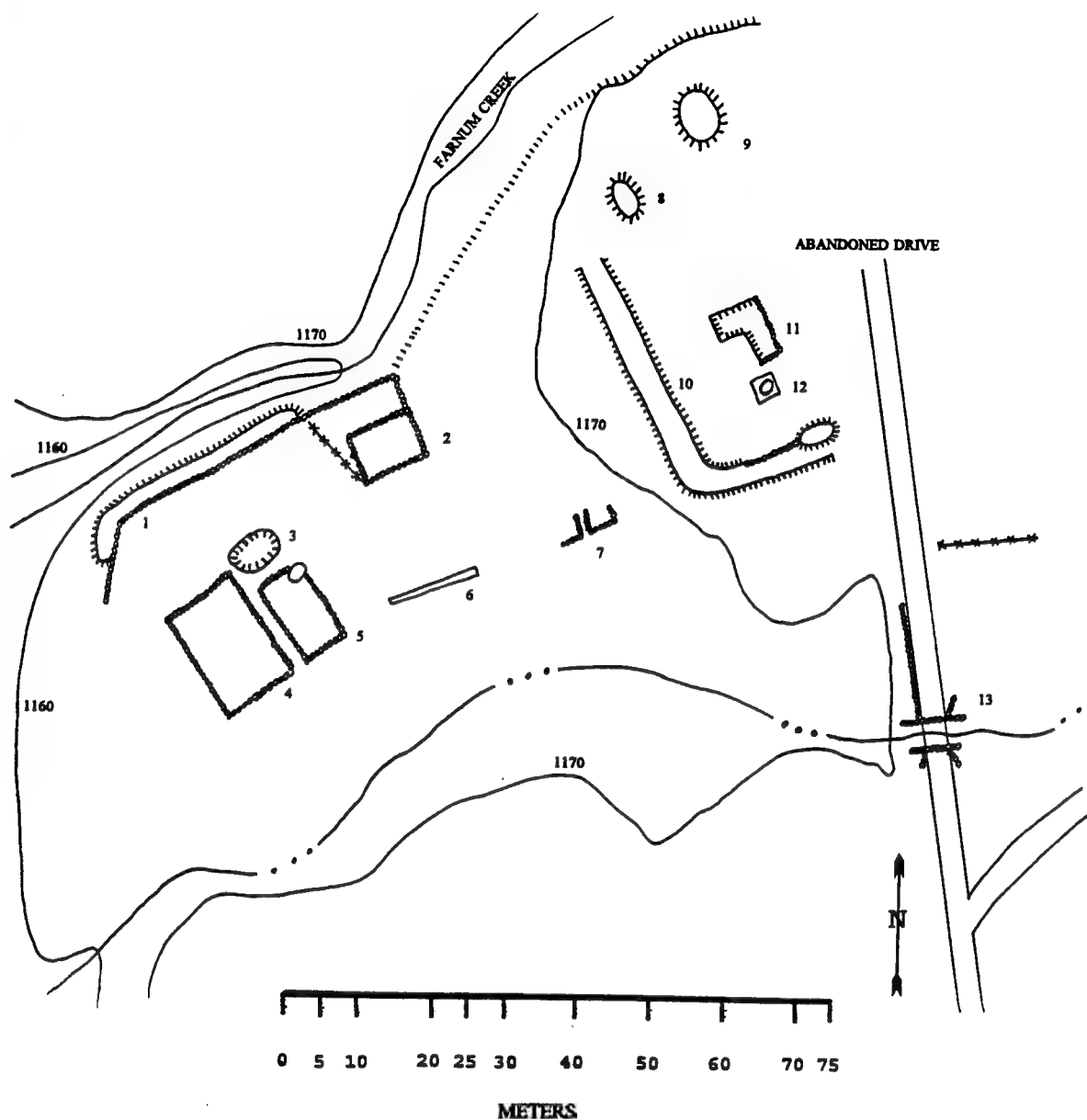
14GE1141-0-1 Glass: Complete tonic bottle, prescription neck finish, clear, base embossed "N"

**Observations, Interpretations and Recommendations:**

The limestone foundations suggest a relatively early date for some of the structures on this farmstead.

Jonathan Roether obtained the patent for this land in 1886. In 1897, John Luthi acquired the property and it remained in the family until it was expropriated in 1963 (Table A9).

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).



Numbered features on the map of site 14GE1141 are defined as follows:

- 1 - limestone fence with rubble piled along N edge
- 2 - concrete plastered limestone foundation connected to limestone fence at NE corner
- 3 - circular depression filled with rubble
- 4 - limestone and concrete foundation
- 5 - limestone and concrete foundation with a large elm growing in the NE corner
- 6 - concrete plastered limestone foundation wall
- 7 - limestone foundation walls
- 8 - limestone rubble pile
- 9 - limestone rubble pile
- 10 - house mound with a limestone wall and rubble pile on E edge
- 11 - house depression with limestone walls
- 12 - limestone lined well with concrete vaulted structure above
- 13 - squared limestone bridge with wooden deck, a rock wall extends N from the NW corner

Figure 47: Map of Site 14GE1141



## 14GE1142

**Site Name:**

**Field No:** FC7

**Cultural Affiliation:** EuroAmerican

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Permian limestone

**Drainage:** Farnum Creek

**Recording Agency:** Archaeology Lab, USD

**Site Size:** Undetermined

**Surface Visibility:** 20%

**Slope:** 0-8%

**Ground Cover Vegetation:** Overgrown farmland, tank damage

**Survey Date:** 6 Oct 1993

**Land Use:** Military maneuvers

**Elevation:** 365 m (1198 ft) amsl

**Site Description and Survey Results:**

This site, a drystone rubble pile, was found on a NW facing slope in the uplands on the east side of Farnum Creek. Surveyors also observed iron barrel hoops, barbed wire and scrap metal. The location corresponds to a rectangular feature recorded on the Milford, KS 1955 USGS 7.5 minute topographic map (photorevised 1978). The feature is assumed to be a farm building.

Numbered features on the site map are defined as follows:

- 1 - limestone rubble pile

**Cultural Material Collected:**

14GE1142-0-1 Ceramic: Ironstone base, white, 1

14GE1142-0-2 Ceramic: Ironstone body sherd, white, 1

14GE1142-0-3 Ceramic: button, white, 1

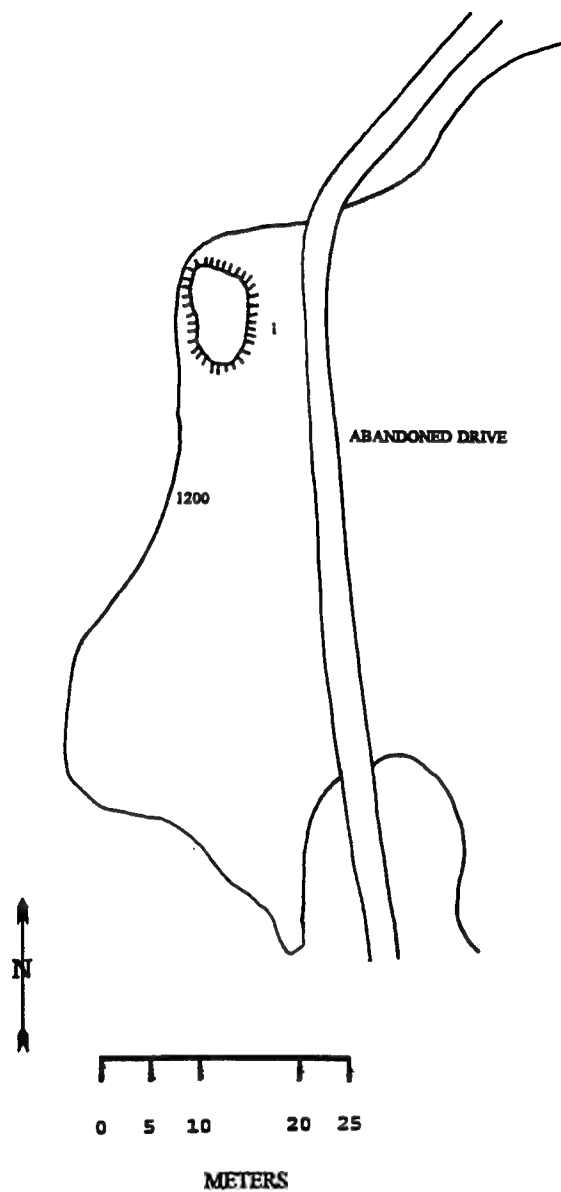
**Observations, Interpretations and Recommendations:**

This structure may have been a barn or house associated with the farmstead of site 14GE1141, less than .25 miles north. As the structure is situated beside the road, and closer to the main section road, it is possible that it is the original house structure, built after 1886. The drystone construction and the ironstone pottery collected are consistent with a late 19th century construction period for this site.

Jonathan Roether obtained a US patent for the property in 1886 (the same property relating to site 14GE1141). In 1897, John Luthi acquired it; and it remained in the family until expropriated in 1963 (Table A9).

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of

the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).



Numbered feature on the map of site 14GE1142 is defined as follows:

1 - limestone rubble pile

Figure 48: Map of Site 14GE1142

**Site Name:**

**Field No:** FC8

**Cultural Affiliation:** EuroAmerican

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Shale

**Drainage:** Farnum Creek

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 2 acres

**Surface Visibility:** 20%

**Slope:** 1-4%

**Ground Cover Vegetation:** Deciduous woods and grass

**Survey Date:** 6 Oct 1993

**Land Use:** Military maneuvers

**Elevation:** 361 m (1184 ft) amsl

**Site Description and Survey Results:**

This farmstead site was found in uplands on the east side of Farnum Creek and south of a small tributary. The site has a concrete pad inscribed with the date "1929" (possibly at the house entrance?). The exposed cellar is adjacent to the entrance pad and has a trench to the north which may be the cellar entrance. A bell-shaped well, lined with limestone and brick and faced with concrete, is NNW from the doorstep or entrance pad. NW of the house is a limestone barn foundation faced with mortar. A sunken trash pit is SW of the well.

Numbered features on the site map are defined as follows:

- 1 - limestone /mortar foundation
- 2 - sunken pit filled with trash
- 3 - well - lined with limestone & brick, faced with concrete
- 4 - sunken limestone cellar with 2 cement pads at NE corner
- 5 - portapottie

No cultural material was collected.

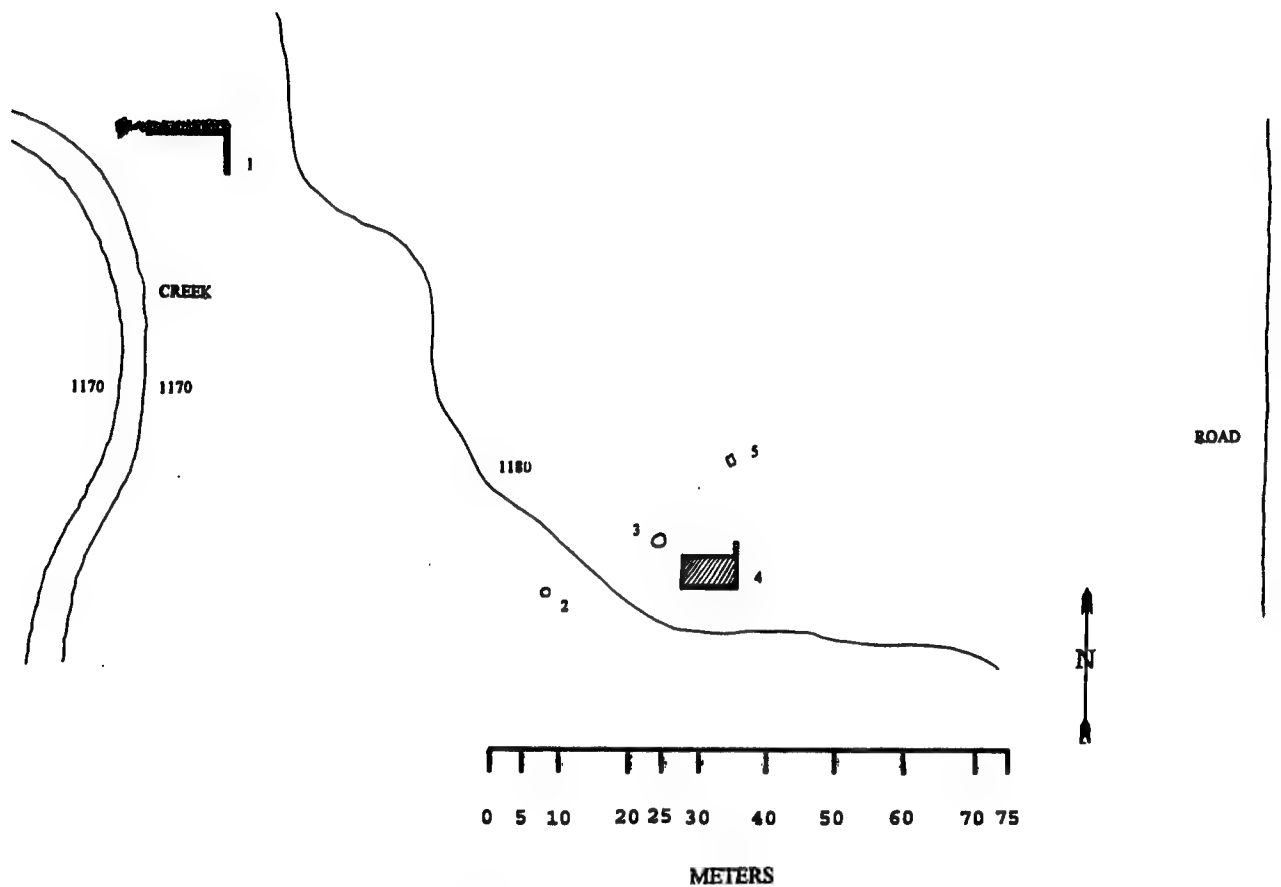
**Observations, Interpretations and Recommendations:**

The limestone and mortar foundation, cellar and well are consistent with late 19th century construction. The presence of concrete pads, well facing and other construction show later additions and improvements into the 20th century.

The dated concrete pad may indicate that particular house was built (or perhaps renovated) in 1929. D. Branscom obtained this property in 1865 and in 1870 transferred it to J.Younkens who owned it until 1918 (Table A10).

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important

historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).



Numbered features on the map of site 14GE1143 are defined as follows:

- 1 - limestone /mortar foundation
- 2 - sunken pit filled with trash
- 3 - well - lined with limestone & brick, faced with concrete
- 4 - sunken limestone cellar with 2 cement pads at NE corner
- 5 - portapottie

Figure 49: Map of Site 14GE1143

**Site Name:**  
**Field No:** FC9  
**Cultural Affiliation:** Prehistoric  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Loess  
**Drainage:** Farnum Creek  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** 2 acres  
**Surface Visibility:** 70-90%  
**Slope:** 4-8%  
**Ground Cover Vegetation:** Flood damaged soybeans  
**Survey Date:** 7 Oct 1993  
**Land Use:** Cultivation  
**Elevation:** 365 m (1198 ft) amsl

**Site Description and Survey Results:**

This prehistoric site, an extensive lithic scatter, was found in uplands on the east side of Farnum Creek along the edge of the conjunction of Farnum Creek and a small tributary. Site 14GE1136 is in the floodplain across the creek. The widely scattered flakes are in two concentrations on either side of a swale cutting through the rise in the field. There has been heavy erosion in this swale, creating several troughs and gullies. One large gully has cut down to the bedrock over 1 meter below the surface. Most of the cultural material is concentrated on the Farnum Creek slope (as opposed to the tributary side) in the area of highest erosion.

The deep gullies and heavily eroded, cultivated fields provided ample evidence of the nature of the shallow subsurface. Shovel tests failed to reveal additional cultural material or other evidence of occupation.

**Cultural Material Collected:**

- 14GE1144-1-1 Retouched blade fragment (1); Proximal portion of prismatic blade; Limited marginal retouch on both lower lateral edges; Permian chert
- 14GE1144-1-2 Scraper (1); Bi-directional, steep retouch on two edges; Retouched on all other margins; Permian chert
- 14GE1144-1-3 Retouched flake (1); Bi-directional retouch on two margins; Permian chert
- 14GE1144-1-4 Scraper (1); Produced on modified secondary flake; Bi-directional retouch on lateral margins; Permian chert
- 14GE1144-1-5 Tertiary flakes (5); Heat-treated Permian chert
- 14GE1144-1-6 Pot lid (1); Permian chert
- 14GE1144-1-7 Tertiary flakes (6); Chalcedony
- 14GE1144-1-8 Tertiary flake (1); Permian chert
- 14GE1144-1-9 Shatter (1); Permian chert
- 14GE1144-1-10 Retouched blade (1); Limited marginal retouch on upper left lateral edge; Wreford chert
- 14GE1144-1-11 Tertiary flakes (5); Wreford chert
- 14GE1144-1-12 Tertiary flakes (9); Permian chert
- 14GE1144-1-13 Retouched flakes (2); Marginal retouch on both lateral edges; Permian chert

14GE1144-1-14 Retouched flake/Scraper (1); Steep marginal retouch on proximal, dorsal edge; Permian chert

14GE1144-1-15 Retouched flake fragment (1); Marginal retouch on distal and left lateral ventral edges; Permian chert

14GE1144-1-16 Tested raw material (1); Heat-treated Permian chert

14GE1144-2-1 Utilized shatter (1); Permian chert

14GE1144-2-2 Shatter (1); Permian chert

14GE1144-2-3 Tertiary flake (1); Smoky Hill Jasper

14GE1144-2-4 Tertiary flakes (3); Dark gray Permian chert

14GE1144-2-5 Tertiary flakes (3); Light gray Permian chert

14GE1144-2-6 Tertiary flake fragment (1); Light gray fossiliferous Permian chert

14GE1144-2-7 Shatter (1); Permian chert

14GE1144-3-1 Scraper (1); Produced from large platform preparation flake; Steep retouch on all margins; Wreford chert

14GE1144-3-2 Biface (1); Produced on large broken primary flake; Invasive on dorsal, minimal on ventral; Green chert

14GE1144-3-3 Utilized blade fragment (1); Utilization on both lateral margins; Wreford chert

14GE1144-3-4 Retouched chunk (1); Bi-directional marginal retouch on two edges; Wreford chert

14GE1144-3-5 Small core (1); Wreford chert

14GE1144-3-6 Tertiary flakes (2); One shows some use wear; Permian chert

14GE1144-3-7 Secondary flake (1); Permian chert (1)

14GE1144-3-8 Retouched flake fragment (1); Marginal retouch; Permian chert

14GE1144-3-9 Retouched flakes (2); Marginal retouch; Heat-treated Permian chert

14GE1144-3-10 Tertiary flake (1); Heat-treated Permian chert

14GE1144-3-11 Tertiary flakes (5); Wreford chert

14GE1144-3-12 Tertiary flakes (3); Permian chert

14GE1144-3-13 Shatter (4); Permian chert

14GE1144-3-14 Natural shatter (2); Permian chert

### **Observations, Interpretations and Recommendations:**

This extensive site, with its variety of tools and debitage, indicates a relatively densely or frequently occupied location. As this low bluff is at the junction of two drainage areas, the occupations were undoubtedly associated with the resources offered by these creeks.

The survey results indicate that this relatively large site is threatened with destruction because of severe erosion. This erosion is the result of improper cultivation (ie. without attention to soil conservation methods). It is also possible that the wooded margins of the valley bluff, immediately adjacent to the field, contain undisturbed deposits. The location of the site in the uplands on a tributary of the Republican River is pertinent to the settlement-subsistence model developed by Schmitt (1988) for the Milford Lake area (see description and evaluation of Schmitt's model above, Chapter 2, Research Goals, Predictive Model, p. 7). If the occupation can be dated, it will help integrate regional culture history with specific land use patterns, thereby enhancing the predictability of the model.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of

the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14GE1144

----- 0 cm  
CRETE SOILS, SEVERELY ERODED  
light brown, moderately clayey  
----- 20  
pronounced yellowish  
----- 60



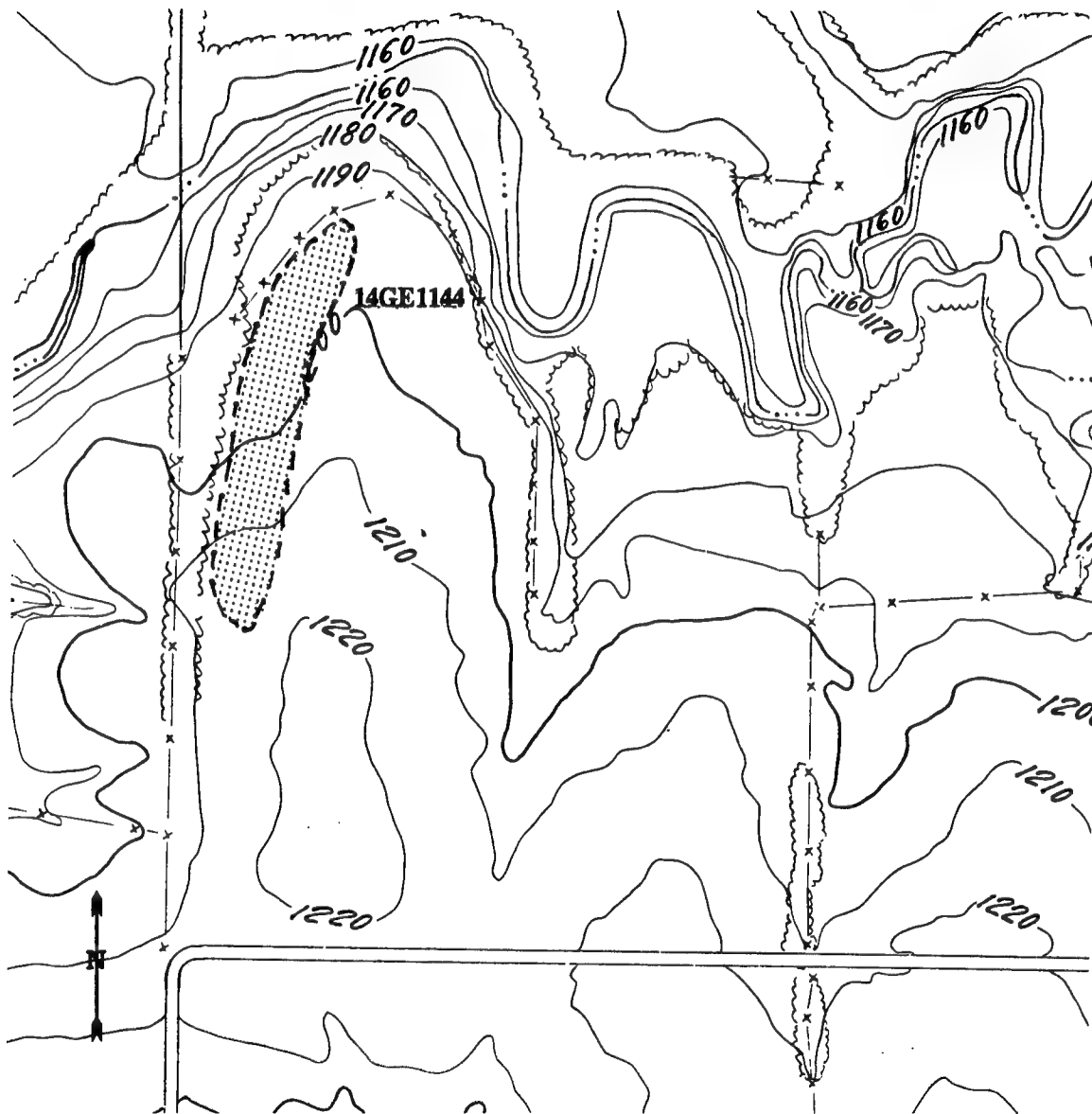


Figure 50: Map of Site 14GE1144 (Scale: 1 inch = 400 feet)

**Site Name:**  
**Field No:** FC10  
**Cultural Affiliation:** Prehistoric  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Permian Limestone  
**Drainage:** Farnum Creek  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** Spot Find  
**Surface Visibility:** 20%  
**Slope:** 0-8%  
**Ground Cover Vegetation:** Baled hayfield  
**Survey Date:** 7 Oct 1993  
**Land Use:** Cultivation  
**Elevation:** 362 m (1188 ft) amsl

#### **Site Description and Survey Results:**

This site, an isolated flake, was found in a rodent burrow in high ground above the east bank of Farnum Creek south of a small tributary. Site 14GE1146 is nearby, in a similar position along the creek bank. There were many rodent burrows in this hayfield, as well as some filled-in military foxholes. Surveyors made a number of shovel tests, but found no other cultural material and no indication of subsurface deposits.

#### **Cultural Material Collected:**

14GE1145-0-1 Tertiary flake (1); Permian chert

#### **Observations, Interpretations and Recommendations:**

This isolated flake is situated in a level, well-drained location close to Farnum Creek; it is undoubtedly residue from a general pattern of food procurement activities in the area.

The lack of material, absence of visible subsurface deposits, and general loss of site integrity due to agriculture suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

#### **Soil profile: 14GE1145**

----- 0 cm  
 SOGN ROCKY CLAY LOAM  
 plow zone - dark,  
 moderately clayey  
 ----- 23  
 increasingly yellowish  
 ----- 43  
 small fragments of  
 limestone and more  
 uniform and silty  
 ----- 60

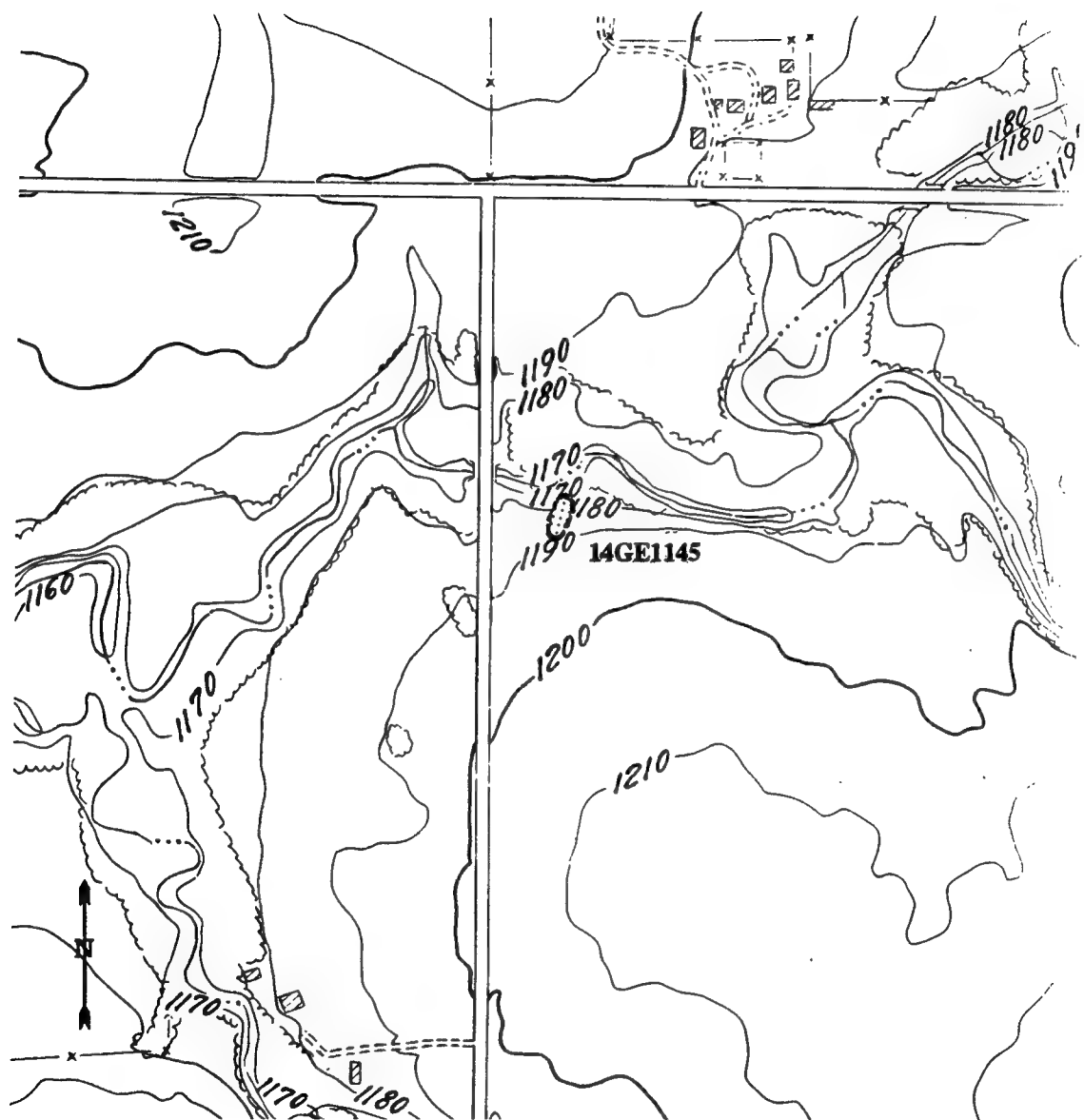


Figure 51: Map of Site 14GE1145 (Scale: 1 inch = 400 feet)

## 14GE1146

**Site Name:**  
**Field No:** FC11  
**Cultural Affiliation:** Prehistoric  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Permian Limestone  
**Drainage:** Republican River  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** Spot Find  
**Surface Visibility:** 80%  
**Slope:** 0-8%  
**Ground Cover Vegetation:** Milo  
**Survey Date:** 19 Oct 1993  
**Land Use:** Cultivation  
**Elevation:** 362 m (1188 ft) amsl

### Site Description and Survey Results:

This site, an isolated flake, was found on the edge of a milo field west of the section road and south of the bridge across a tributary of Farnum Creek. Site 14GE1145 is nearby, in a similar position along the creek bank.

The field had been bulldozed for planting; mounds of topsoil had been pushed up around the margins of the field. Shovel tests failed to reveal any additional cultural material or other evidence of occupation.

### Cultural Material Collected:

14GE1146-0-1 Tertiary flake (1); Permian chert

### Observations, Interpretations and Recommendations:

This isolated flake is situated in a level, well-drained location accessible to the resources of Farnum Creek; it is undoubtedly residue from a general pattern of food procurement activity in the area.

The lack of material, absence of subsurface deposits, and general loss of site integrity due to agriculture suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

### Soil profile: 14GE1146

————— 0 cm  
SOGN ROCKY CLAY LOAM  
plow zone - dark,  
moderately clayey  
————— 15  
increasingly yellowish  
————— 43  
small fragments of  
limestone and more  
uniform and silty  
————— 60

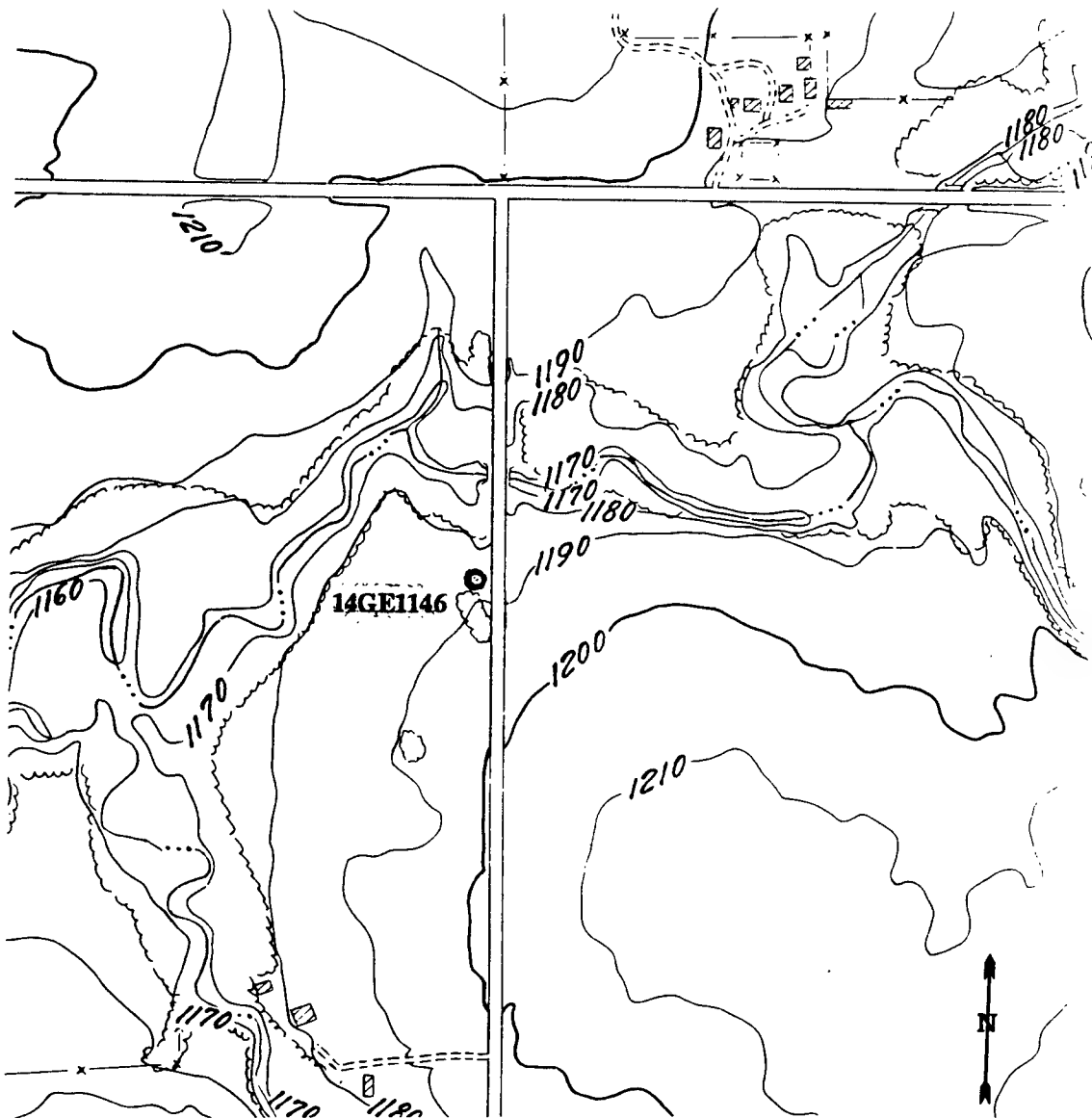


Figure 52: Map of Site 14GE1146 (Scale: 1 inch = 400 feet)

## 14GE1147

**Site Name:**  
**Field No:** MAD1  
**Cultural Affiliation:** Prehistoric  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Loess  
**Drainage:** Republican River  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** 100 sq meters  
**Surface Visibility:** 70%  
**Slope:** 4-8%  
**Ground Cover Vegetation:** Brush and grass, flood-scoured  
**Survey Date:** 8 Oct 1993  
**Land Use:** Public use  
**Elevation:** 354 m (1161 ft) amsl

### Site Description and Survey Results:

This site, a small lithic scatter, was found in uplands on the north shore of Milford Lake. Site 14GE2, which Eyman in 1966 typed as Schultz focus Plains Woodland (Eyman 1966), is .25 miles to the east.

The flakes were found on the beach and likely came from an old topsoil buried by modern landfill activity on the shoreline just east of the old Ft. Riley marina (although it is possible they were transported in the landfill). The bank has eroded approximately 4 meters at this point. Shovel tests above the bank failed to reveal any additional cultural material or other evidence of occupation.

### Cultural Material Collected:

14GE1147-0-1 Retouched shatter (1); Bi-directional marginal retouch on one edge; Permian chert  
14GE1147-0-2 Tertiary flake (1); Permian chert

### Observations, Interpretations and Recommendations:

The presence of landfill at this site (shown by the unconsolidated ground surface etched from the bank by the flood waters, leaving the sod above and the original ground surface below) indicates recent disturbance. It is associated with the construction of the Army marina (now abandoned) nearby. As shovel testing did not reveal additional cultural material, it is not clear whether the site extends back from the bank, has been washed away by the floods, or was part of the landfill.

The lack of material, absence of subsurface deposits, and general loss of site integrity due to landfilling and earlier agriculture suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14GE1147

----- 0 cm  
HASTINGS SILTY CLAY LOAM,  
4-8% SLOPES  
----- 60

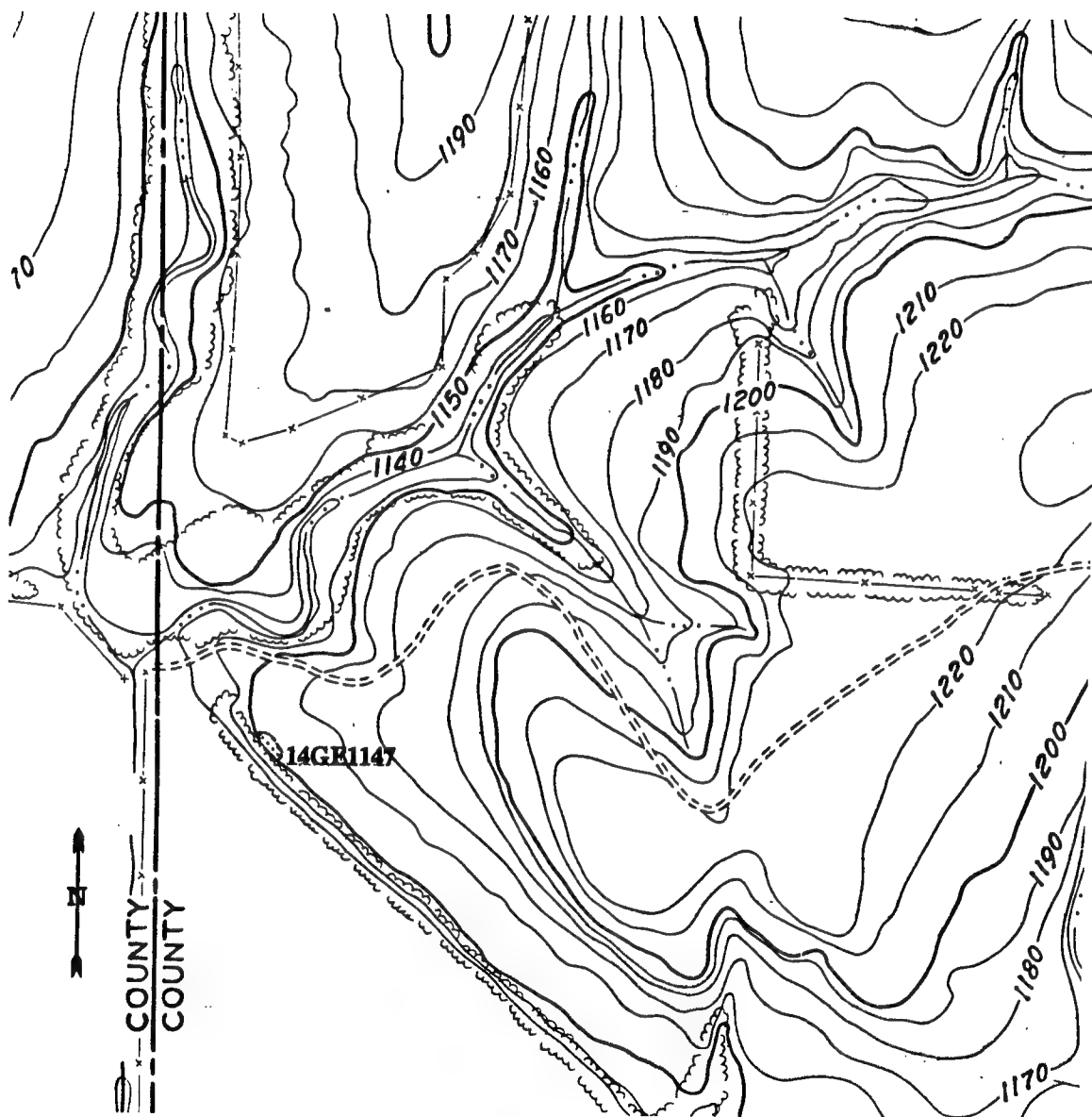


Figure 53: Map of Site 14GE1147 (Scale: 1 inch = 400 feet)

**Site Name:**  
**Field No:** MAD2  
**Cultural Affiliation:** Late Archaic to Early Woodland  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Loess  
**Drainage:** Republican River  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** 10 x 5 m  
**Surface Visibility:** 80%  
**Slope:** 4-8%  
**Ground Cover Vegetation:** None  
**Survey Date:** 8 Oct 1993  
**Land Use:** Public use  
**Elevation:** 353 m (1158 ft) amsl

**Site Description and Survey Results:**

This site consists of two stone tools (a projectile point and biface midsection) found on the shingle beach of Milford Lake east of the old Ft. Riley marina. These artifacts likely eroded from the bank, an old uplands topsoil buried by modern landfill activity, although they may have been transported in the landfill. Shovel tests above the bank failed to reveal any additional cultural material or other evidence of occupation.

Site 14GE2 is located nearby, on an adjacent hilltop; it has been typed as Schultz focus Plains Woodland (Eyman 1966).

**Cultural Material Collected:**

14GE1148-0-1 Projectile point (1); Lange Point: Late Archaic to Early Woodland (Bell 1958:36); Stemmed point with slightly expanding base and abrupt shoulders; Invasive retouch; Wreford chert  
14GE1148-0-2 Biface fragment (1); Portion of midsection; Invasive retouch, use-wear evident; Wreford chert

**Description of 14GE1148-0-1 Projectile point (Figure 54):**

This complete specimen has excurvate lateral edges, weakly defined shoulders and a straight or slightly expanding stem.

The obverse face has an irregular flaking pattern. Wide, expanding scars extend in from lateral edges on the blade and basal edge on the stem. The profile of the transverse cross-section is flattened and irregular. The remnant of a single large expanding flake scar, measuring 20 mm in width, is located on the right side of the face. The right margin of this scar is obscured by step fracturing and marginal retouch or damage scars along the right lateral edge of the artifact. Both notches are defined on this face by a series of short, steep pressure flake scars that extends in an arc between shoulder and stem ear.

The reverse face bears large irregular flake scars that extend in from the left lateral edge of the blade and several scars that extend towards the tip from the base of the stem. These basal scars step fracture



in an area of mass located in the middle of the face between the shoulders. There is also step fracturing along the right side of this mass from scars that begin along the right edge of the artifact. This right edge is heavily battered, blunted and step-fractured between tip and base (including the lateral margin of the stem). The right margin is also straighter than the left margin indicating reworking or use (or both) along this margin.

The basal edge is straight and does not appear to be ground.

This specimen is typologically similar to Table Rock Stemmed (Late Archaic, 3000 to 1000 B.C.) and also to Lange (Late Archaic and Early Woodland, 4000 B.C. to A.D. 1000) (Bell 1958:36, Chapman 1975a:257).

Dimensions: 54 mm, length.  
29 mm, max. width just above the shoulders.  
8 mm, thickness.

#### Observations, Interpretations and Recommendations:

The presence of landfill at this site (shown by the unconsolidated ground surface etched from the bank by the flood waters, leaving the sod above and the original ground surface below) indicates recent disturbance. It is likely associated with the construction of the Army marina (now abandoned) nearby. As shovel testing did not reveal additional cultural material, it is not clear whether the site extends back from the bank, has been washed away by the floods, or was part of the landfill.

The lack of material, absence of subsurface deposits, and general loss of site integrity due to landfiling and earlier agriculture suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

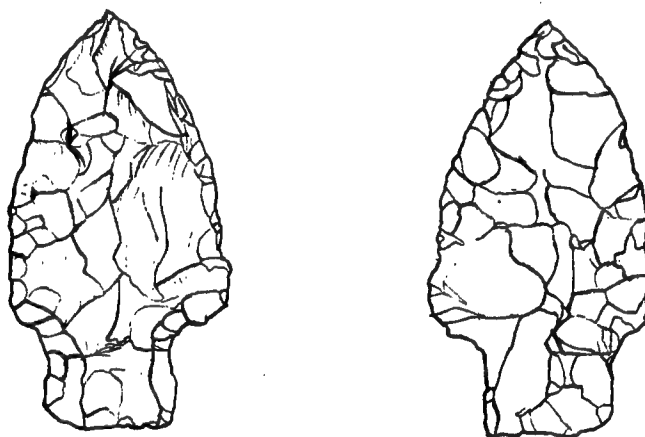


Figure 54: Projectile point.

Soil profile: 14GE1148

————— 0 cm  
HASTINGS SILTY CLAY LOAM,  
4-8% SLOPES  
wave-cut erosion  
————— 45  
buried A  
————— 70  
B, tending yellowish

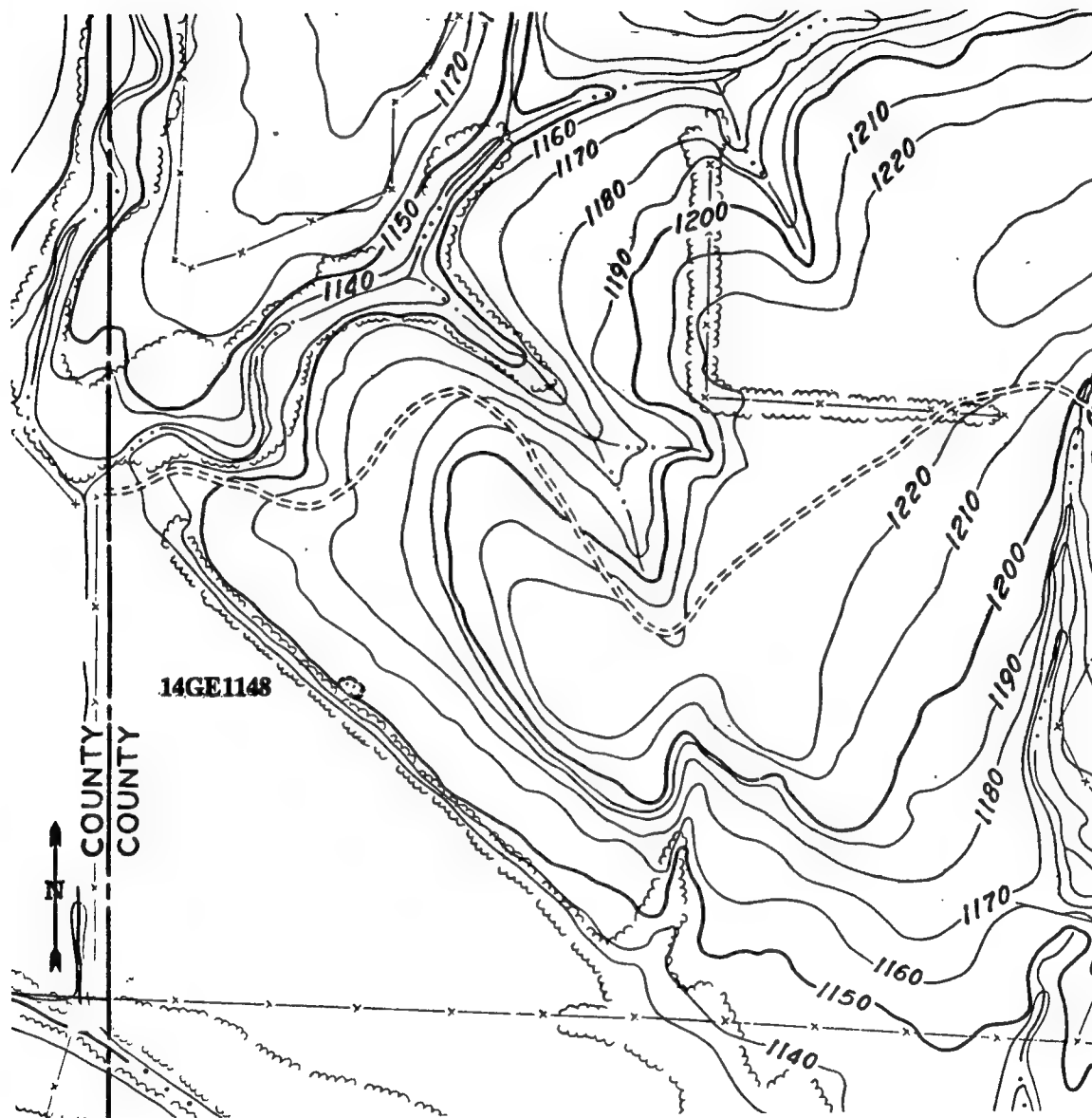


Figure 55: Map of Site 14GE1148 (Scale: 1 inch = 400 feet)

## 14GE1149

**Site Name:**

**Field No:** MAD3

**Cultural Affiliation:** EuroAmerican

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 200 sq meters

**Surface Visibility:** 70%

**Slope:** 4-8%

**Ground Cover Vegetation:** Flood scoured Tallgrass prairie

**Survey Date:** 8 Oct 1993

**Land Use:** Public use

**Elevation:** 356 m (1168 ft) amsl

**Site Description and Survey Results:**

Two chunks of old brick foundation lie next to a draw and along the north shore of Milford Lake. One section is a N-S wall and the other, a fragment. These foundation slabs are anchored in a trench filled with locally made concrete containing reddish-brown sandstone chunks.

**Cultural Material Collected:**

14GE1149-0-1 Red sandstone chunk

**Observations, Interpretations and Recommendations:**

The nature of these foundation fragments (local stone, set in an unlined trench) indicates a relatively expedient construction technique. The cement used is locally made, not Portland, indicating a probable date before 1890. The function of this structure is unknown; it is presumed that it was an agricultural building. The land surrounding this site was first occupied by Patrick Geraghty in 1860 (see Table A11); in 1882 the property passed to James Andrews who farmed it along with the land surrounding site 14GE1152. Extant maps do not show any structures within a half mile of this location.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).

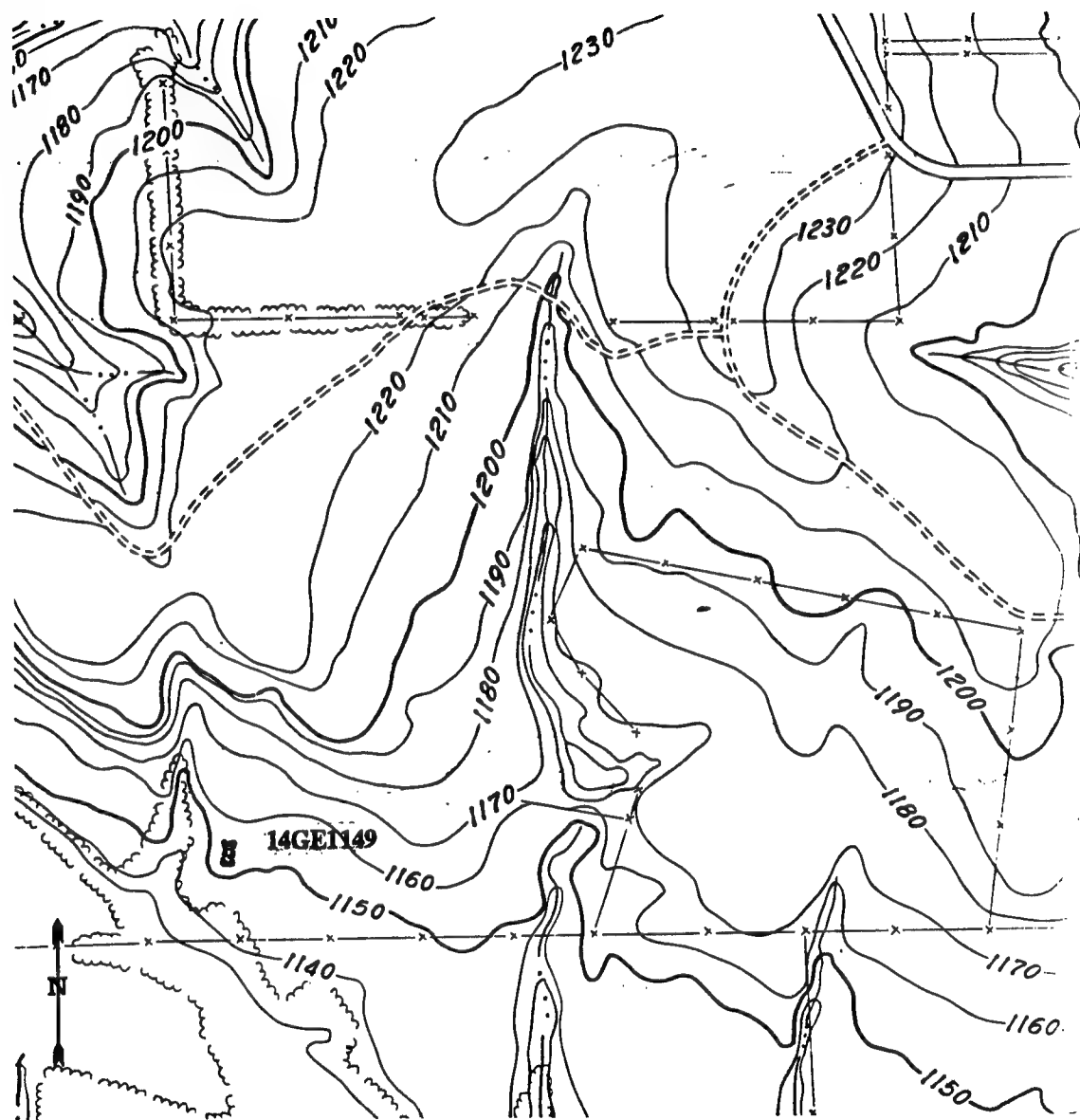


Figure 56: Map of Site 14GE1149 (Scale: 1 inch = 400 feet)

## 14GE1150

**Site Name:**

**Field No:** MAD4

**Cultural Affiliation:** Late Plains Village

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 100 sq meters

**Surface Visibility:** 70%

**Slope:** 4-8%

**Ground Cover Vegetation:** Flood scoured prairie

**Survey Date:** 8 Oct 1993

**Land Use:** Public use

**Elevation:** 352 m (1155 ft) amsl

### **Site Description and Survey Results:**

This site, consisting of a pottery fragment and several flakes, is an old uplands location now on the beach of the north shore of Milford Lake, adjacent to a narrow tree-lined draw that intermittently drains the higher uplands. Surveyors were able to gain a good impression of the surface and shallow subsurface in the area, as there were well exposed cutbanks along the draw, the Milford Lake shoreline, and the flood-scoured land above. These investigations did not reveal any additional cultural material; shovel tests were also unsuccessful.

Site 14GE2, which Eyman in 1966 typed as Schultz focus Plains Woodland, is nearby to the north.

### **Cultural Material Collected:**

14GE1150-0-1 Body sherd, cord-roughened (1)

14GE1150-0-2 Retouched flake fragment (1); Permian chert

14GE1150-0-3 Tertiary flakes (4); Permian chert

The pottery fragment (Figure 57) is a body sherd 5.3 mm thick and slightly larger than a quarter. The interior is rough. The exterior is cord-roughened and smoothed over. Sherd color is buff with an orange tinge on the exterior, while the interior is dark brown. The sherd has no grit temper and small clay inclusions are visible on the interior surface and in the light gray core. The sherd fits well into the late Plains Village ceramic complex, and might be either Upper Republican or Pomona.

### **Observations, Interpretations and Recommendations:**

The pottery sherd appears to have been water-worn, suggesting that it has tumbled along the beach with wave action. It is possible that the site is lightly scattered upslope or that it has been washed away by floods.

The lack of material, absence of subsurface deposits, and general loss of site integrity due to agriculture and flood erosion suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).



Figure 57: Pottery fragment.

Soil profile: 14GE1150

----- 0 cm  
 HASTINGS SILTY CLAY LOAM,  
 4-8% SLOPES  
 much erosion  
 ----- 60  
 subsoils

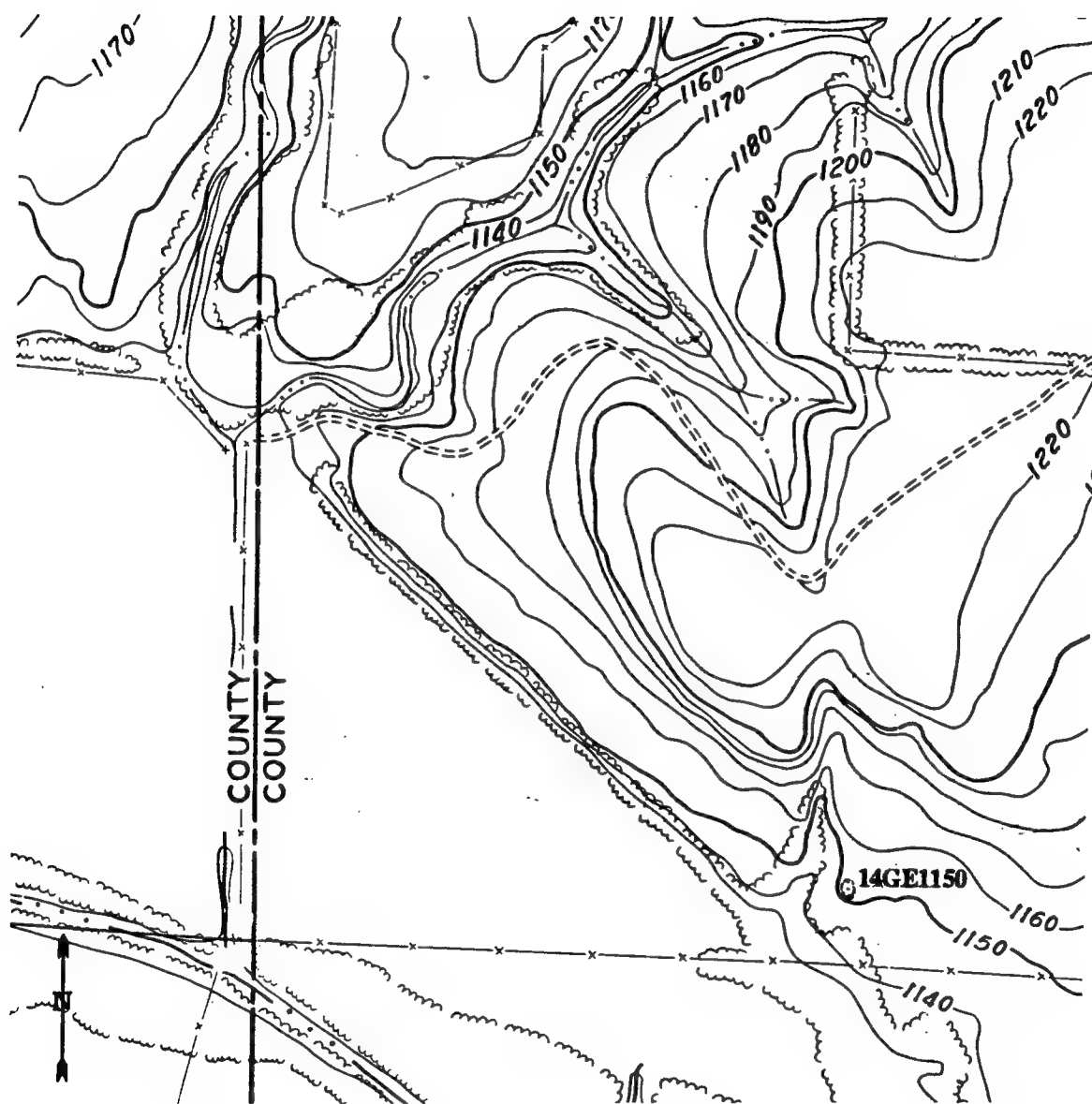


Figure 58: Map of Site 14GE1150 (Scale: 1 inch = 400 feet)

## 14GE1151

**Site Name:****Field No:** MAD5**Cultural Affiliation:** EuroAmerican**Topographic Setting:** Flint Hills Uplands**Parent Material:** Loess**Drainage:** Republican River**Recording Agency:** Archaeology Lab, USD**Site Size:** 3 acres**Surface Visibility:** 20%**Slope:** 4-8%**Ground Cover Vegetation:** Deciduous woods and grass**Survey Date:** 8 Oct 1993**Land Use:** Public use**Elevation:** 359 m (1178 ft) amsl**Site Description and Survey Results:**

This farmstead site was found in uplands 1/2 mile north of the shore of Milford Lake just south of highway 82 to Wakefield. The house site has a standing brick chimney; there are five other foundations, some made of loose, unmortared limestone, others with cement.

Numbered features on the site map are defined as follows:

- 1 - house with limestone foundation and mortared limestone cellar with steps in NE corner
- 2 - wooden tank frame
- 3 - limestone retaining wall
- 4 - limestone and cement foundation
- 5 - well with concrete cap
- 6 - cement floor with wood around edge
- 7 - concrete foundation
- 8 - metal stock tank
- 9 - limestone foundation (part drystone), coated with cement
- 10 - metal stock tank

**Cultural Material Collected:**

14GE1151-0-1 Glass: Bottle finish & shoulder, flat panel, hand applied lip, amethyst

14GE1151-0-1 Glass: Bottle base, rectangular, amethyst (maybe part of #1)

14GE1151-0-1 Glass: Bottle base/body, 7.6 cm OD, amethyst, base embossed "D\_\_ S.B.H. & CO. / REGISTERED / 83 / P.R. "

14GE1151-0-1 Glass: Bottle base/body, melted, brown/green, embossed: a diamond/ "SOCCC"

14GE1151-0-1 Glass: Bottle body shards, melted, amethyst

14GE1151-0-1 Glass: Bottle, Coke bottle mid-section, green

14GE1151-0-1 Metal: wire nail

14GE1151-0-1 Masonry: asbestos siding, white



### **Observations, Interpretations and Recommendations:**

The presence of drystone foundations in some of the buildings suggests a relatively early date for parts of the farmstead. John Meyers obtained a patent for the land in 1879 (Table A12). The numerous pieces of amethyst glass come from bottles made between 1880 and 1916 (during these years glass was made clear by adding manganese dioxide as a decolorizer; exposure to the sun turned such glass an amethyst color). These findings suggest that this is the original farmstead, built in the late 19th century, with structural additions through to the mid-20th century.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).

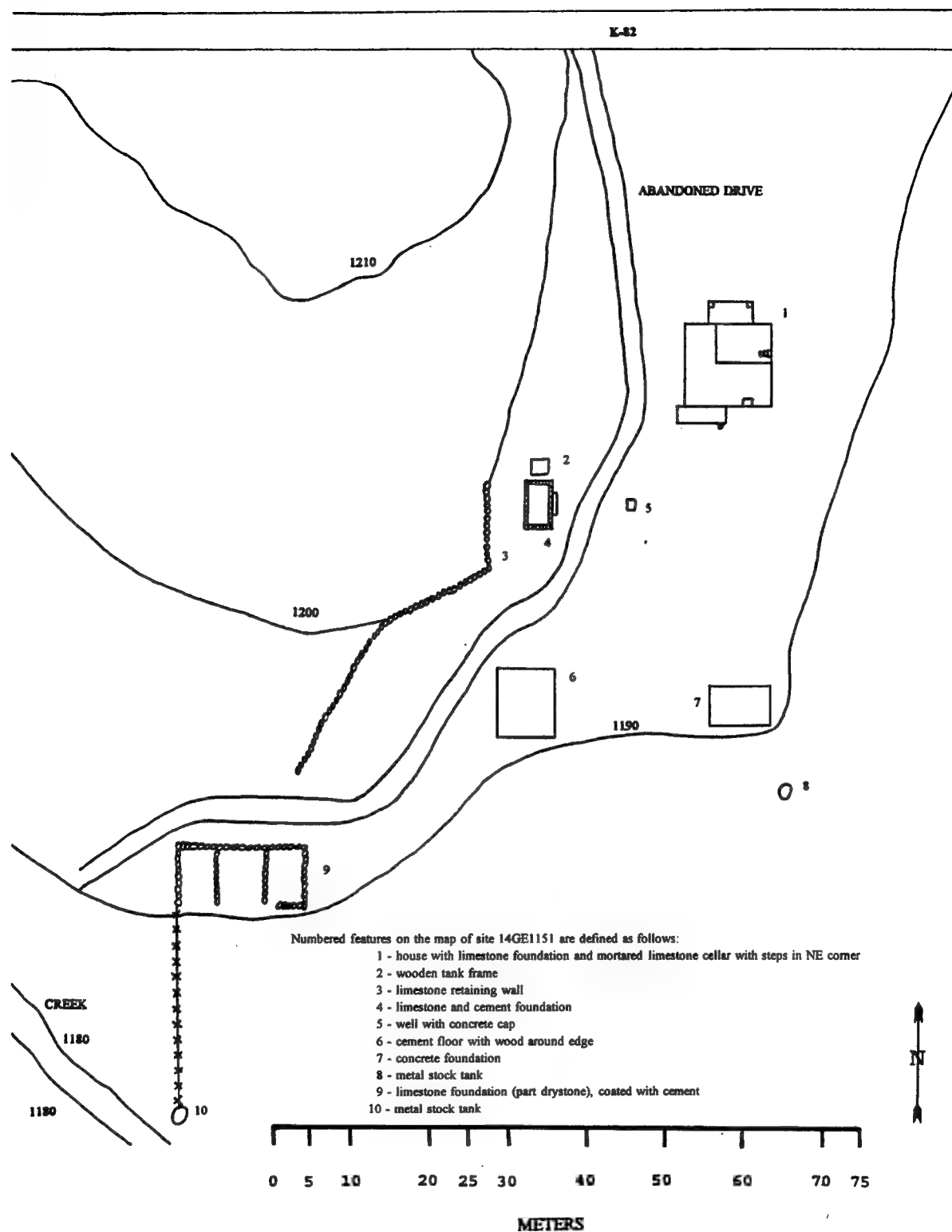


Figure 59: Map of Site 14GE1151

## 14GE1152

**Site Name:**

**Field No:** MAD6

**Cultural Affiliation:** EuroAmerican

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 3.5 acres

**Surface Visibility:** 30%

**Slope:** 4-8%

**Ground Cover Vegetation:** Prairie grass reclaiming old farm

**Survey Date:** 8 Oct 1993

**Land Use:** Public use

**Elevation:** 354 m (1161 ft) amsl

### Site Description and Survey Results:

This farmstead site is in uplands on the north shore of Milford Lake at the head of a large, lake-filled draw. It consists of two cement foundations, some cement and limestone walls, some cement floor, large piles of bulldozed rubble, a full limestone well and cement-clad limestone cistern.

Numbered features on the site map are defined as follows:

- 1 - cement clad limestone cistern
- 2 - green patch - probable house area
- 3 - field stone well
- 4 - cement foundation
- 5 - cement foundation
- 6 - cement & limestone foundation section with rubble pile
- 7 - rubble pile
- 8 - cement corner wall
- 9 - large flat-topped mound with broken concrete walls

### Cultural Material Collected:

14GE1152-0-1 Ceramic: Stoneware crock rim/body sherd, tan

14GE1152-0-2 Glass: Complete bottle, stopper top, lt aqua, 9 cm x 4 cm dia, embossed on base: diamond above "11"

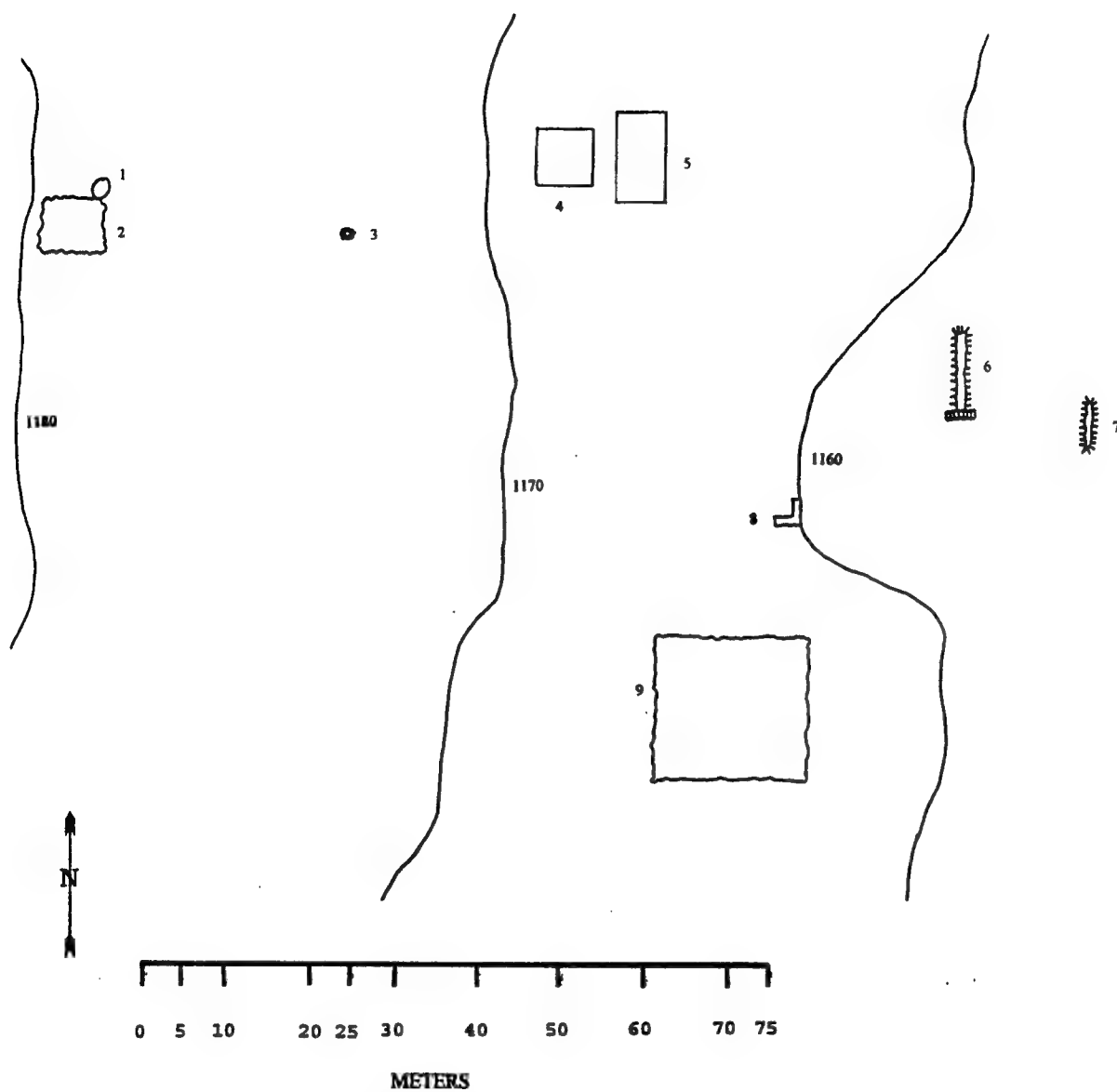
14GE1152-0-3 Glass: Tonic bottle, hand applied lip, clear opalescent, 9.5 x 3.6 x 2 cm, embossed on base: "Rex"

### Observations, Interpretations and Recommendations:

The cement foundations suggest a 20th century date for some of the buildings, however the limestone well and piles of limestone rubble could indicate some late 19th century construction as well. According to records in the county courthouse, the patent for this farmstead was obtained by John Shandy in 1869, transferred to A. E. Corey and thence to John Hill in 1870 (Table A13).

A late 19th to early 20th century date is suggested by the artifacts recovered. The tonic bottle was possibly made between 1880 and 1900 by an unknown bottle maker for a patent-medicine known as "St. Luke's Immediate Relief or Pain King", the label of which also said "Miss Sarah Stuck, local agt., Schoolcraft, Mich." (Toulouse 1971:440). This style of bottle came to be known as the "Blake" bottle and was probably used by other patent-medicine suppliers besides Miss Sarah. The round bottle was made by the Diamond Glass Co. of Royersford, PA since 1924 when the plain diamond symbol came into use as the semiautomatic machines replaced hand blowing.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).



Numbered features on the map of site 14GE1152 are defined as follows:

- 1 - cement clad limestone cistern
- 2 - green patch - probable house area
- 3 - field stone well
- 4 - cement foundation
- 5 - cement foundation
- 6 - cement & limestone foundation section with rubble pile
- 7 - rubble pile
- 8 - cement corner wall
- 9 - large flat-topped mound with broken concrete walls

Figure 60: Map of Site 14GE1152

**Site Name:**  
**Field No:** MAD7  
**Cultural Affiliation:** Late Archaic/Early Woodland  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Loess  
**Drainage:** Republican River  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** 100 sq meters  
**Surface Visibility:** 70-80%  
**Slope:** 1-4%  
**Ground Cover Vegetation:** Milo  
**Survey Date:** 9 Oct 1993  
**Land Use:** Cultivation  
**Elevation:** 360 m (1181 ft) amsl

#### **Site Description and Survey Results:**

This site, a projectile point and debitage, was found in uplands on the north shore of Milford Lake at the conjunction of a small creek and an intermittent tributary draining the higher hills. The area had been cleared by bulldozing for milo (shown by a pile of earth at the field edge); shovel tests also revealed that the field had earlier been in corn (a corn cob was discovered). Surveyors were able to gain good insight into the surface and shallow subsurface, as the fields were eroded (the ridges and furrows were flattened) and the nearby creek and tributary had well-exposed cutbanks. Shovel tests conducted in the field and tree-lined creek area nearby revealed no cultural material or other evidence of occupation.

Site 14GE2, which Eyman in 1966 typed as Schultz focus Plains Woodland, is almost a mile to the southwest.

#### **Cultural Material Collected:**

14GE1153-0-1 Corner or Side-notched projectile point (1)  
 14GE1153-0-2 Shatter (1); Permian chert  
 14GE1153-0-3 Tertiary flake (1); Permian chert

#### **Description of 14GE1153-0-1 Corner or Side-notched projectile point (Figure 61):**

This is a broken point fragment--the tip and one lobe of the base are snapped off. The lobe snap has removed most of the evidence of one notch. The other notch is oriented slightly towards the distal end of the point, giving it the appearance of a corner notch. The sides of the blade are straight.

The obverse face has a convex profile in transverse cross-section. Selective pressure flaking extends along both lateral edges between the barbs and the break near the tip of the point. Pressure flake scars are five to eight mm in length. The reverse face has an irregular profile due partly to a deep depression on the right side. Flake scars from the right lateral edge blur the right margin of this depression. The right lateral edge of the point has been trimmed with a series of regular, short (three to four mm), deep pressure flake scars. The base of the point is slightly concave, although at least half of the basal edge is missing. The extant portion of this edge is ground.

This dart point appears to have been finished or manufactured to a useable state. It was damaged when the tip and one basal lobe were snapped off, possibly during use. The depression on the reverse face probably occurred before final shaping or trimming: it may be a remnant primary flake scar or a potlid fracture from rapid heating.

Typologically, the point resembles Kings Corner Notched type (dating probably to the Woodland period) (Chapman 1975b:309), though its fragmentary condition makes identification difficult.

Dimensions: 26 mm, maximum width between barbs.

#### **Observations, Interpretations and Recommendations:**

The location of this small scatter of material suggests that the site is associated with food resources provided by the two creeks. It is also possible that this material was transported to this spot in slope wash from the nearby intermittent tributary, as there is visible evidence of alluviation in the field.

The lack of material, absence of visible subsurface deposits, and general loss of site integrity due to agriculture and flood erosion suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

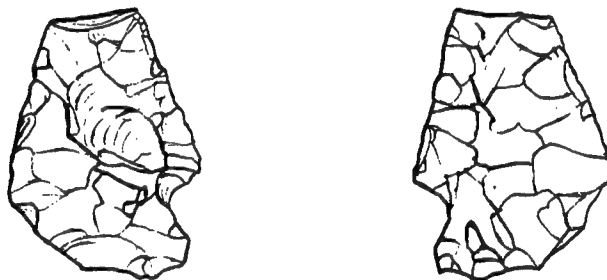


Figure 61: Projectile point fragment.

Soil profile: 14GE1153

----- 0 cm

HASTINGS SILTY CLAY LOAM,  
1-4% SLOPES  
silty, sandy loam

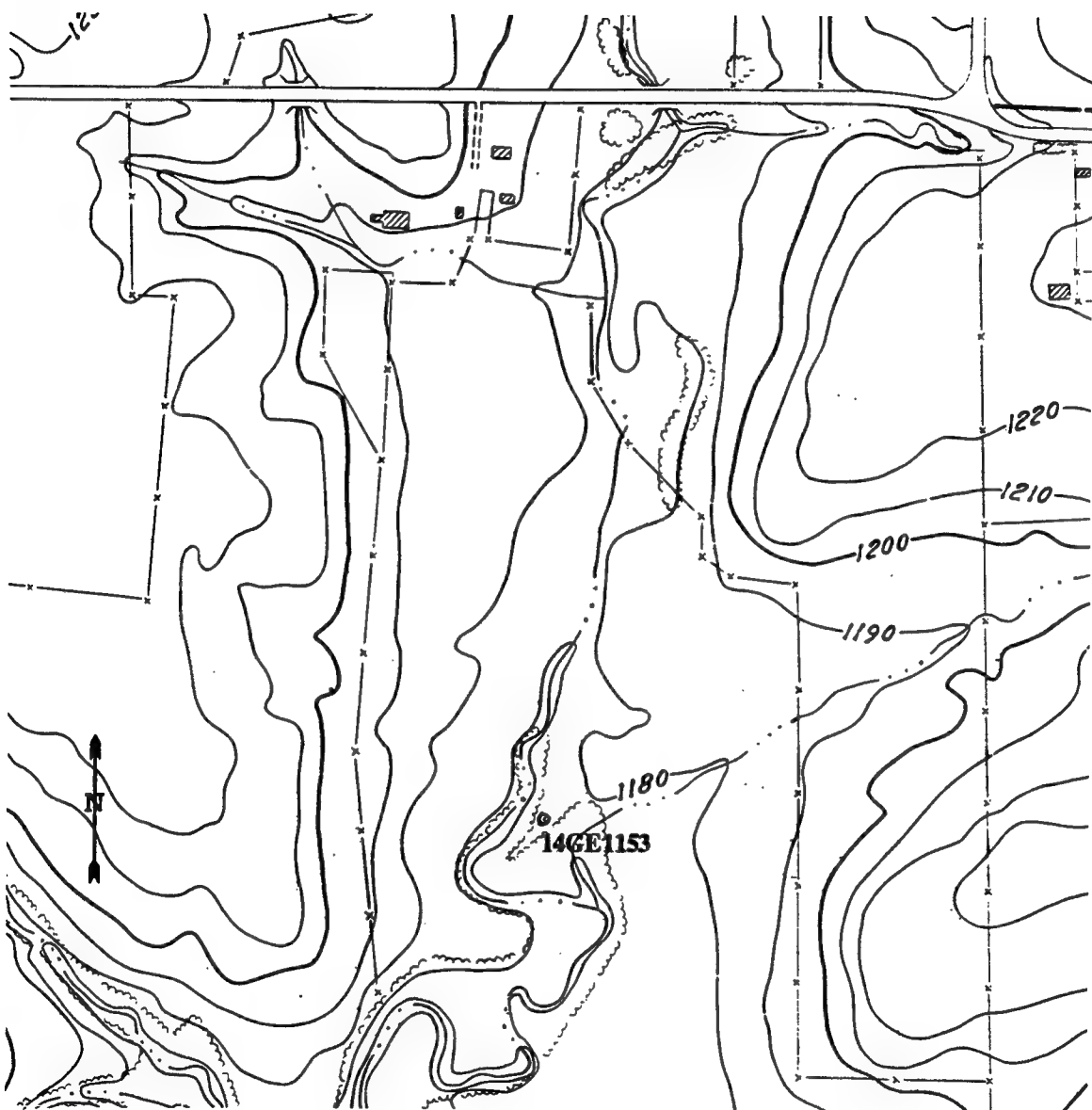


Figure 62: Map of Site 14GE1153 (Scale: 1 inch = 400 feet)



## 14GE1166

**Site Name:**

**Field No:** MAD8

**Cultural Affiliation:** EuroAmerican

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** .5 acre

**Surface Visibility:** 50%

**Slope:** 4-8%

**Ground Cover Vegetation:** Tallgrass prairie, flood scoured

**Survey Date:** 9 Oct 1993

**Land Use:** Public use

**Elevation:** 361 m (1184 ft) amsl

### Site Description and Survey Results:

This refuse dump site is in uplands along the north shore of Milford Lake, south of highway 82 to Wakefield. Surveyors observed a wide range of early 20th century automobile and tractor parts and household rubbish.

### Cultural Material Collected:

14GE1166-0-1 Glass: Canning jar dome lid, with cover groove in center, aqua

14GE1166-0-2 Glass: Bottle or jar neck & shoulder shard, amethyst

14GE1166-0-3 Glass: Bottle base, square, thick, aqua

14GE1166-0-4 Glass: Bottle body shard, aqua embossed "P.../\_..."

14GE1166-0-5 Glass: Body shard, amethyst 3 embossed parallel lines

14GE1166-0-6 Glass: Body shards, green

14GE1166-0-7 Metal: Square nails

### Observations, Interpretations and Recommendations:

This refuse dump is probably associated with a farmstead, now under water, situated to the southeast (the closest building of which lies 100 meters away). The amethyst glass shards and square nails could indicate late 19th century use of the site. Amethyst glass come from bottles made between 1880 and 1916 when glass was made clear by adding manganese dioxide as a decolorizer. Exposure to the sun turned such glass amethyst (Rock 1981:17). The Ford Model 'T' type wheel and a 1948 license plate suggest use into the 1950s.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).

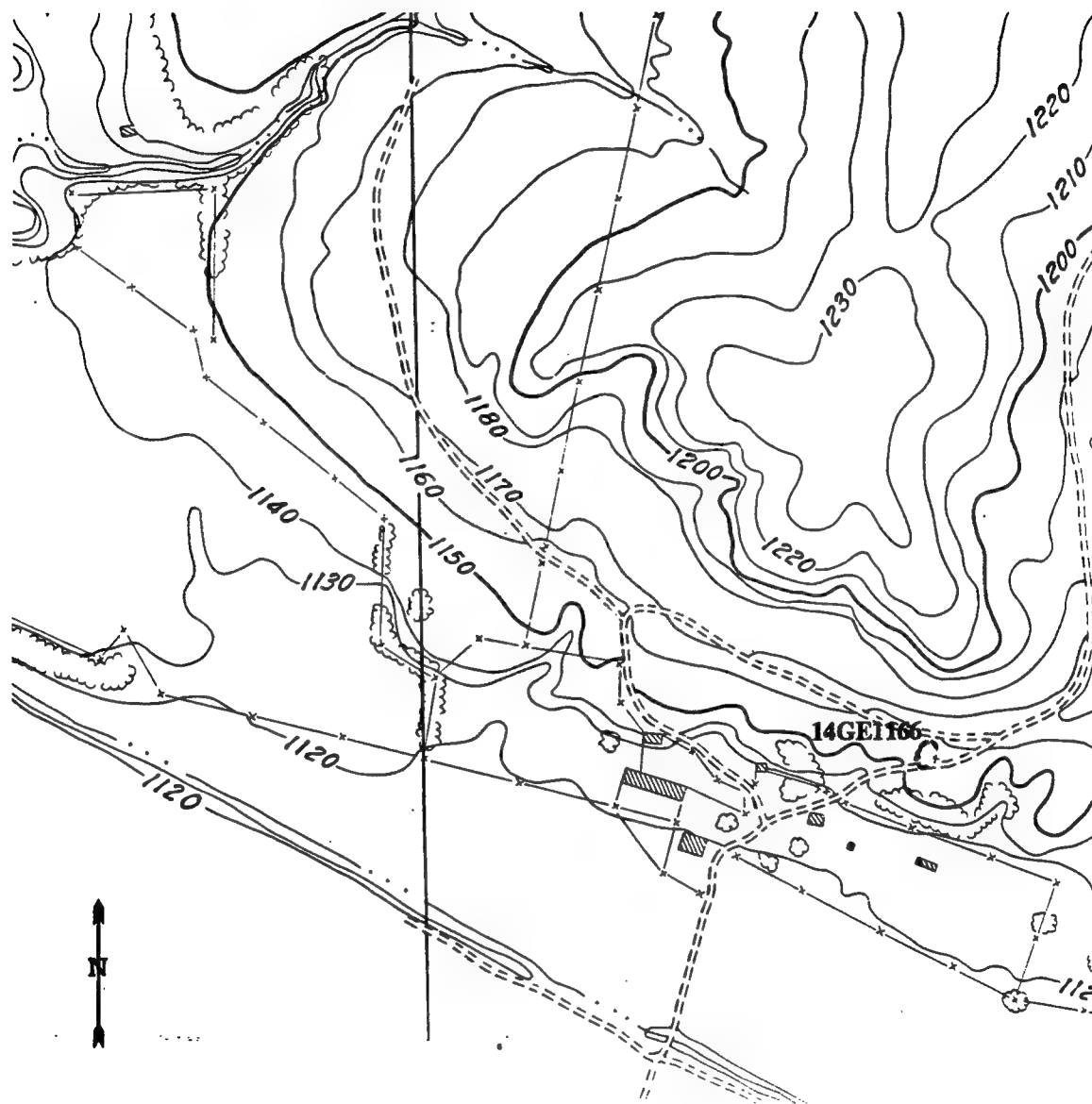


Figure 63: Map of Site 14GE1166 (Scale: 1 inch = 400 feet)

## 14GE1167

**Site Name:**

**Field No:** MAD9

**Cultural Affiliation:** EuroAmerican

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** Undetermined

**Surface Visibility:** 50%

**Slope:** 4-8%

**Ground Cover Vegetation:** flood scoured prairie

**Survey Date:** 9 Oct 1993

**Land Use:** Public use

**Elevation:** 353 m (1158 ft) amsl

**Site Description and Survey Results:**

This farmstead site is in uplands on a small bay along the north shore of Milford Lake, adjacent to a large draw. The remains consist of a small mound of natural stone rubble and some foundation fragments partly submerged in the lake.

**Cultural Material Collected:**

14GE1167-0-1 Glass: Bottle neck with applied lip, opalescent aqua

14GE1167-0-2 Metal: Square nail, bent & broken

**Observations, Interpretations and Recommendations:**

A rectangular structure is depicted on the US Army Corps of Engineers Milford Lake map (US Army Corps of Engineers n.d: Sheet 24) at this spot. Its function is unknown, but it is undoubtedly a farm building.

Applied lips such as 14GE1167-0-1 were common on bottles made between 1840 and 1920 (Rock 1981:8). The square nail could imply some 19th century construction. County records show that Andrew D. Reed obtained a patent for the property in 1872 (Table A14).

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).

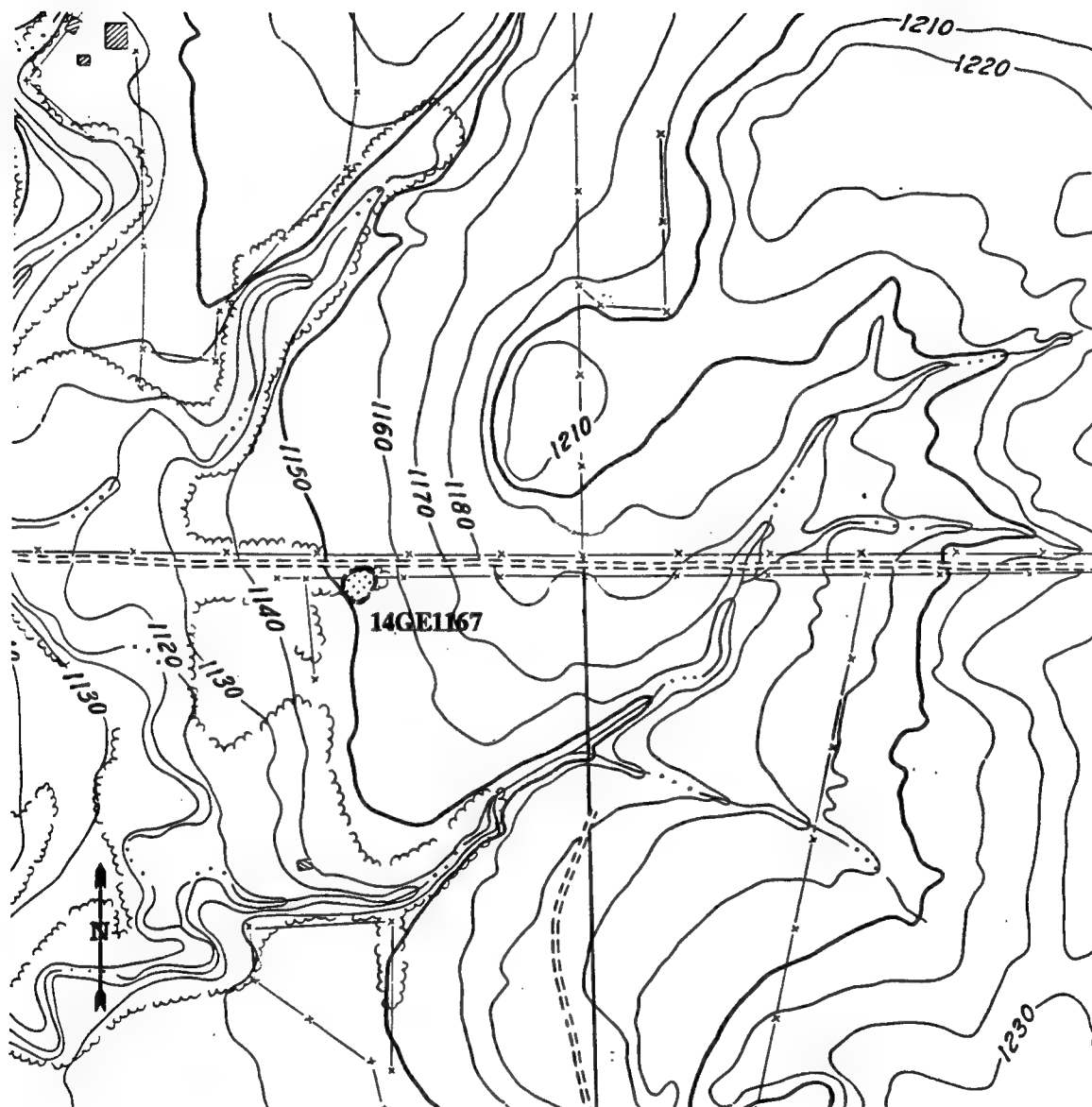


Figure 64: Map of Site 14GE1167 (Scale: 1 inch = 400 feet)

## 14GE1154

**Site Name:**

**Field No:** MAD10

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Flint Hills Uplands

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 10 x 5 m

**Surface Visibility:** 70%

**Slope:** 30%

**Ground Cover Vegetation:** Flood scoured prairie

**Survey Date:** 9 Oct 1993

**Land Use:** Public use

**Elevation:** 355 m (1165 ft) amsl

**Site Description and Survey Results:**

This site, a small lithic scatter, has eroded out of a slumping sandbank on the north shore of Milford Lake. Site 14GE3, which Muller and Schock in 1964 typed as Schultz focus Plains Woodland, is 1/2 mile to the northwest.

A shovel test revealed that there is a darker brownish soil strata in the cutbank - possibly an organic layer - but surveyors found no additional material, in spite of the extensive erosion and washing of this material by wave action. Further shovel tests, and an examination of the beach, revealed no fire-cracked rock or other evidence of occupation.

**Cultural Material Collected:**

14GE1154-0-1 Tertiary flakes (4); Permian chert

**Observations, Interpretations and Recommendations:**

The small size of this lithic scatter suggests a brief occupation, but the presence of a darker lens of soil equally suggests the possibility of a more extensive site (ie. if this material was organic waste from human occupation rather than a tree fall or other natural source). In view of the negative results of shovel tests and a search of the surrounding beach, eroded land surface and nearby cutbanks, however, it is assumed that the deposit is natural.

The lack of material, absence of subsurface deposits of cultural origin, and general loss of site integrity due to agriculture and lake-based erosion suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14GE1154

----- 0 cm  
MONTANA SILT LOAM  
light brown, sandy loam  
----- 15  
tan, sandy  
----- 30  
darker brownish (like top)  
----- 45  
reddish sand

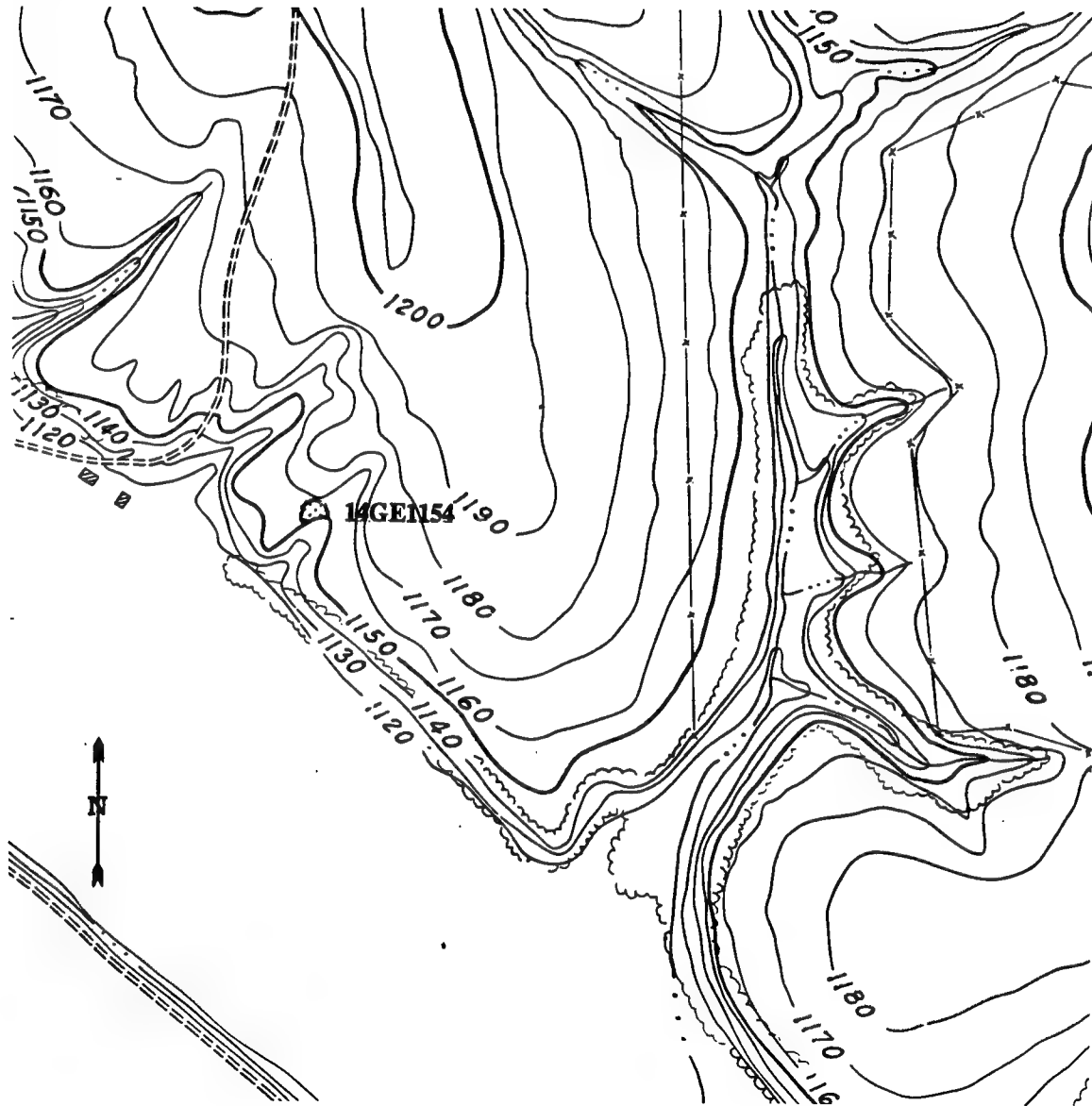


Figure 65: Map of Site 14GE1154 (Scale: 1 inch = 400 feet)

## 14GE1155

**Site Name:**

**Field No:** MAD11

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** Spot Find

**Surface Visibility:** 70%

**Slope:** 30%

**Ground Cover Vegetation:** Prairie, flood-scoured

**Survey Date:** 10 Oct 1993

**Land Use:** Public use

**Elevation:** 354 m (1161 ft) amsl

**Site Description and Survey Results:**

This projectile point fragment lay on the steep eroded sideslope of an upland spur that is now a high-topped peninsula forming the west side of the Madison Creek inlet. Much of the area is heavily eroded with the limestone cap exposed. Shovel tests failed to reveal any additional cultural material or other evidence of occupation.

Site 14GE4, which Muller and Schock (1964) typed as Schultz focus Plains Woodland/Smoky Hill focus Plains Village, is up slope 1/8 mile to the north northwest.

**Cultural Material Collected:**

14GE1155-0-1 Projectile point fragment (1); Distal portion of small point: non-diagnostic; Permian chert

**Observations, Interpretations and Recommendations:**

This peninsula has been heavily occupied in the past, so it is not surprising to find artifacts scattered widely across it. It is possible, however, that the isolated piece in this particular locality is part of a site scoured out by the flood waters.

The lack of material, absence of subsurface deposits, and general loss of site integrity due to agriculture and flood erosion suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

**Soil profile: 14GE1155**

----- 0 cm  
MONTANA SILT LOAM  
dark gray, clayey silt  
----- 27  
pale brown, fine sandy  
silt  
----- 38

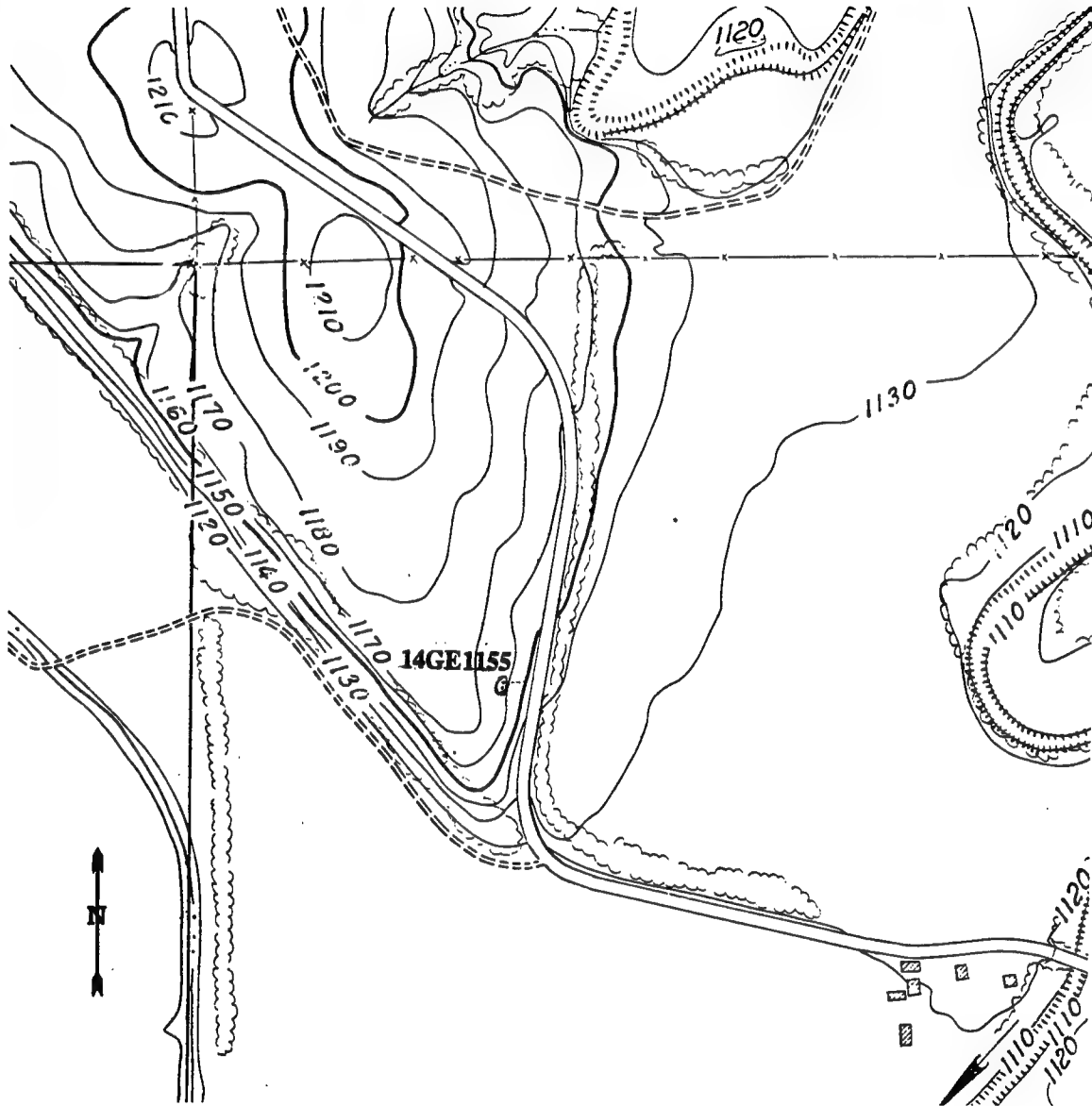


Figure 66: Map of Site 14GE1155 (Scale: 1 inch = 400 feet)



## 14GE1156

**Site Name:**

**Field No:** MAD12

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 50 x 50 m

**Surface Visibility:** 60%

**Slope:** 8-12%

**Ground Cover Vegetation:** Tallgrass prairie, bushes & trees

**Survey Date:** 10 Oct 1993

**Land Use:** Public use and military maneuvers

**Elevation:** 355 m (1165 ft) amsl

### Site Description and Survey Results:

This small lithic scatter is on a flat upland bluff heavily overgrown with bushes and small trees, now along the shore of the flooded valley of Madison Creek on the north shore of Milford Lake. It has suffered considerable scouring and bank erosion. There is an old car to the east on the same lobe of land. The land west of this level area slopes gently higher and has much water in it. There is a berm terrace or soil buildup at the E-W fenceline. Surveyors were able to assess the shallow subsurface in shoreline banks; shovel tests failed to reveal any additional cultural material or other evidence of occupation.

This former farm field is now being used as an army bivouac area, as indicated by the military trash (e.g. ration packs, communications wire), tank tracks and foxholes.

Site 14GE4, which Muller and Schock (1964) typed as Schultz focus Plains Woodland and Smoky Hill focus Plains Village, is 1/8 mile to the southwest. Site 14GE41, typed by Parks (1978) as both Archaic and Schultz focus Plains Woodland, is apparently directly south across a draw. Surveyors were not able to locate this site; it may have eroded into the lake.

### Cultural Material Collected:

14GE1156-0-1 Retouched chunk (1); Permian chert

14GE1156-0-2 Retouched flake fragment (1); Permian chert

14GE1156-0-3 Tertiary flakes (5); Permian chert

### Observations, Interpretations and Recommendations:

This site is a small lithic scatter, probably a temporary campsite or flintknapping spot, associated with food procurement activity along Madison Creek. The area has suffered extensively from surface wash, shore erosion and military activity.

The lack of material, absence of subsurface deposits, and general loss of site integrity due to agriculture, flood erosion and military impacts suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14GE1156

----- 0 cm  
HASTINGS SILTY CLAY LOAM,  
8-12% SLOPES  
----- 60

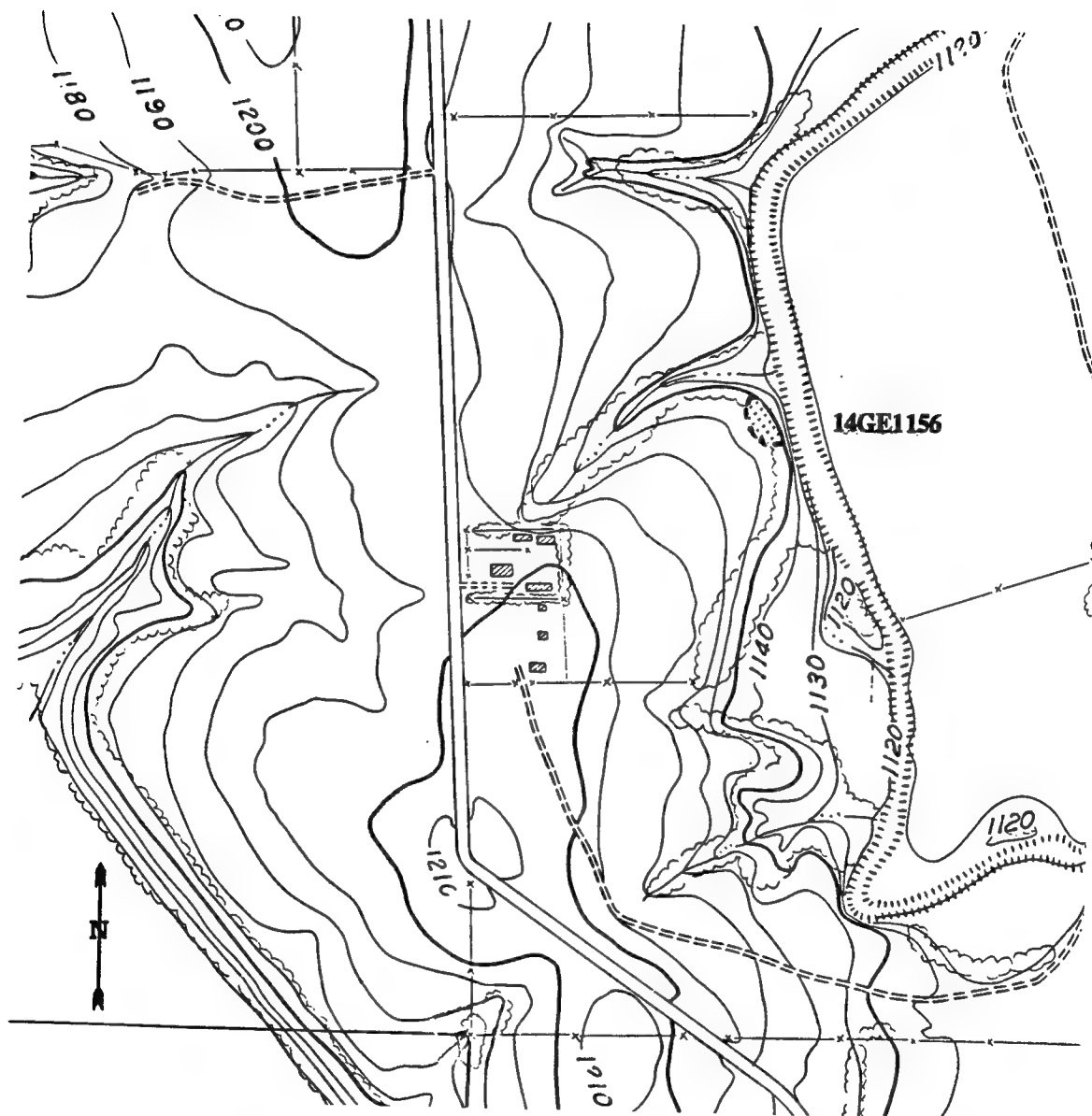


Figure 67: Map of Site 14GE1156 (Scale: 1 inch = 400 feet)

## 14GE1157

**Site Name:**

**Field No:** MAD13

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 100 x 100 m

**Surface Visibility:** 50%

**Slope:** 4-8%

**Ground Cover Vegetation:** Grassland, flood-scoured

**Survey Date:** 10 Oct 1993

**Land Use:** Public use, military maneuvers

**Elevation:** 355 m (1165 ft) amsl

**Site Description:**

The site consists of flakes scattered across a sandy, rocky, heavily eroded surface on a fan-like point extending into the Madison Creek inlet. It is adjacent to a graveled tank road, used as a water crossing. The site is in flood-scoured grass, with a fringe of trees by the water and along the draw to the south. Surveyors found a few flakes clustered approximately 90 m above the shore (near the curve in a tank ramp road) and others in the gully beside the road. Military rubbish around the site (equipment parts, empty ration bags) indicates that the area is used for maneuvers and as a bivouac or staging area. Surveyors were able to assess the shallow subsurface along the shoreline; this investigation, and shovel tests over the site area, failed to reveal any additional cultural material or evidence of occupation.

There are several sites nearby. 14GE1156 is on the adjacent point of land. Site 14GE4, which Muller and Schock (1964) typed as Schultz focus Plains Woodland and Smoky Hill Plains Village, is 1/3 mile to the southwest. Sites 14GE26, 14GE27, and 14GE41 apparently lie in an arc about 1/4 mile away towards the south. Surveyors could not relocate any of them.

**Cultural Material Collected:**

14GE1157-0-1 Retouched flake (1); Small notch on one edge; Permian chert

14GE1157-0-2 Tertiary flake (1); Heat-treated Permian chert

14GE1157-0-3 Tertiary flakes (6); Permian chert

14GE1157-0-4 Shatter (1); Permian chert

**Observations, Interpretations and Recommendations:**

The evidence suggests a small lithic scatter created during a brief occupation, presumably associated with food procurement along Madison Creek.

The lack of material, absence of visible subsurface deposits and the general loss of site integrity due to agriculture, flood erosion, and military impacts suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14GE1157

----- 0 cm

HASTINGS SILTY CLAY LOAM,  
4-8% SLOPES

----- 60

subsoils

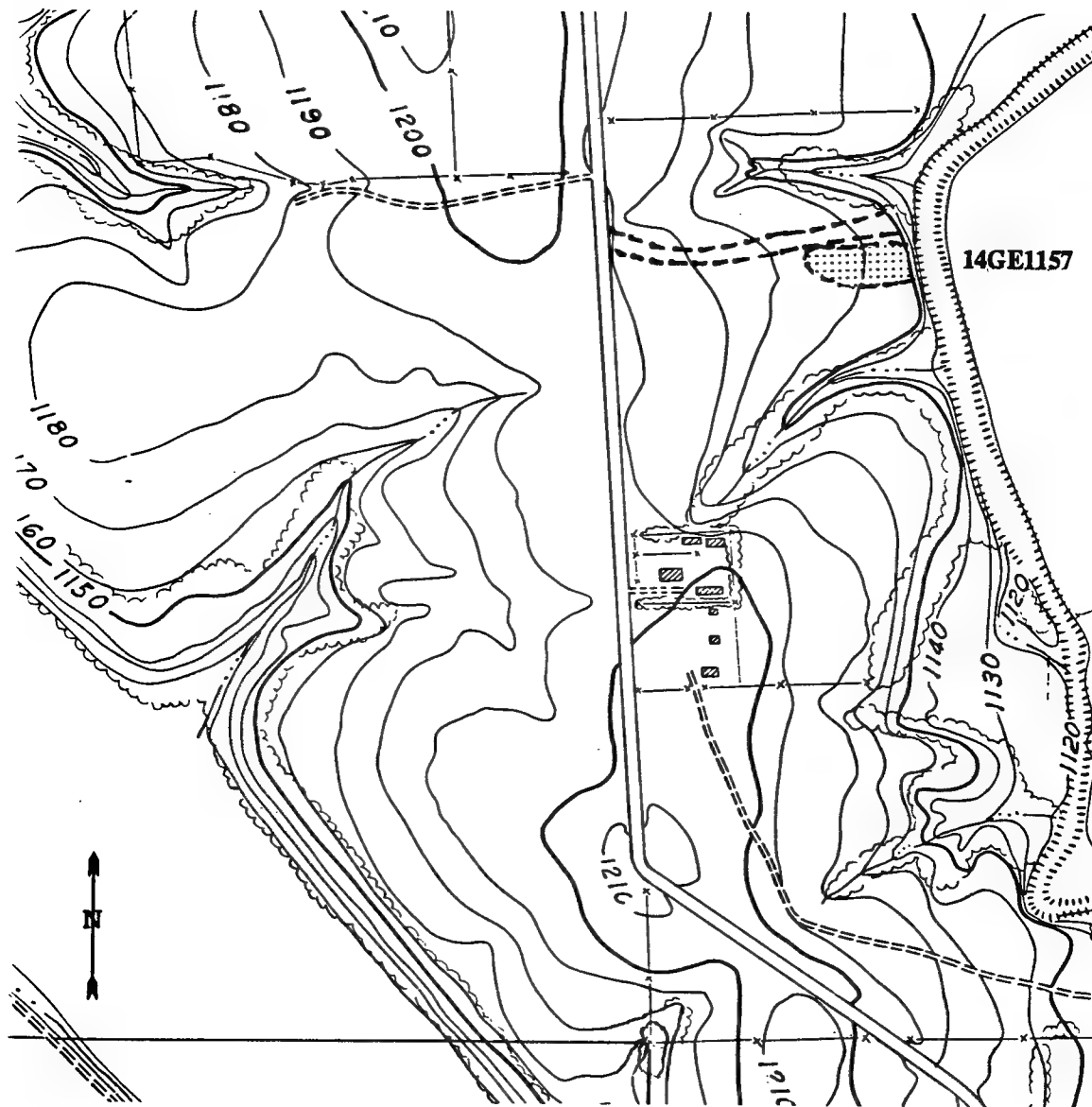


Figure 68: Map of Site 14GE1157 (Scale: 1 inch = 400 feet)

## 14GE1165

**Site Name:**

**Field No:** MAD14

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** Spot Find

**Surface Visibility:** 30%

**Slope:** 2-8%

**Ground Cover Vegetation:** Roadside weeds

**Survey Date:** 10 Oct 1993

**Land Use:** Public use/road right of way

**Elevation:** 358 m (1175 ft) amsl

**Site Description and Survey Results:**

This site, an isolated flake, was found in an old roadway at the west end of Madison Creek bridge below the causeway embankment. Surveyors examined the natural roadbed and shovel tested the area on both sides of the wheel tracks but found no additional cultural material or other evidence of occupation.

Sites 14GE4, 14GE26, 14GE27, and 14GE41 lie to the south, and 14GE29 is to the north along a Madison Creek bluff.

**Cultural Material Collected:**

14GE1165-0-1 Retouched flake (1); Bi-directional marginal retouch; Permian chert

**Observations, Interpretations and Recommendations:**

The designation of this locality as a site may be somewhat dubious, as it is so close to the modern highway embankment. The area, a dirt track, is not itself disturbed. Although shovel tests revealed no other material, it is possible that the site extends under the embankment or into the thick brush.

The lack of material and possibility that the site is buried under the modern highway embankment suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14GE1165

----- 0 cm  
CRETE SOILS, SEVERELY ERODED  
----- 60  
subsoils

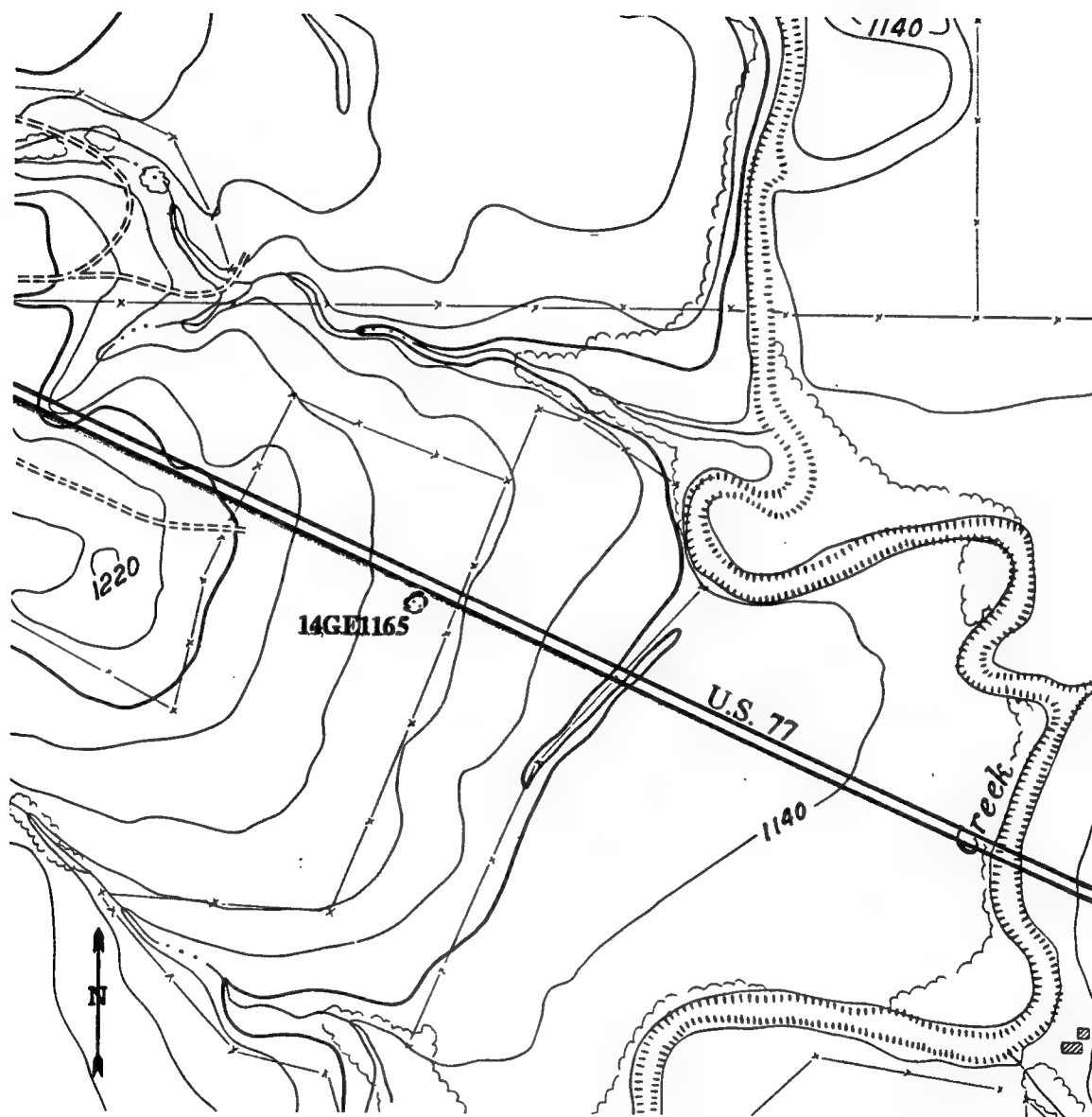


Figure 69: Map of Site 14GE1165 (Scale: 1 inch = 400 feet)

**Site Name:****Field No:** MAD15**Cultural Affiliation:** EuroAmerican**Topographic Setting:** Flint Hills Upland**Parent Material:** Loess**Drainage:** Republican River**Recording Agency:** Archaeology Lab, USD**Site Size:** 2 acres**Surface Visibility:** 10%**Slope:** 1-4%**Ground Cover Vegetation:** Overgrown with weeds and thickets**Survey Date:** 10 Oct 1993**Land Use:** Public use**Elevation:** 363 m (1191 ft) amsl**Site Description and Survey Results:**

This farmstead site, surrounded by a juniper shelter belt, is on the spine of the peninsula forming the west side of the inlet of Madison Creek. Surveyors found several foundation remnants in place (one limestone, the rest concrete) and several mounds of rubble. A short section of concrete stem wall with depression to the east may be a privy or part of a larger structure. A scrap of exposed concrete surface is probably a sidewalk.

Numbered features on the site map are defined as follows:

- 1 - concrete barn foundation
- 2 - limestone foundation corner
- 3 - concrete wall with depression to the E
- 4 - concrete slab
- 5 - concrete fragment
- 6 - Iris bed
- 7 - Juniper trees

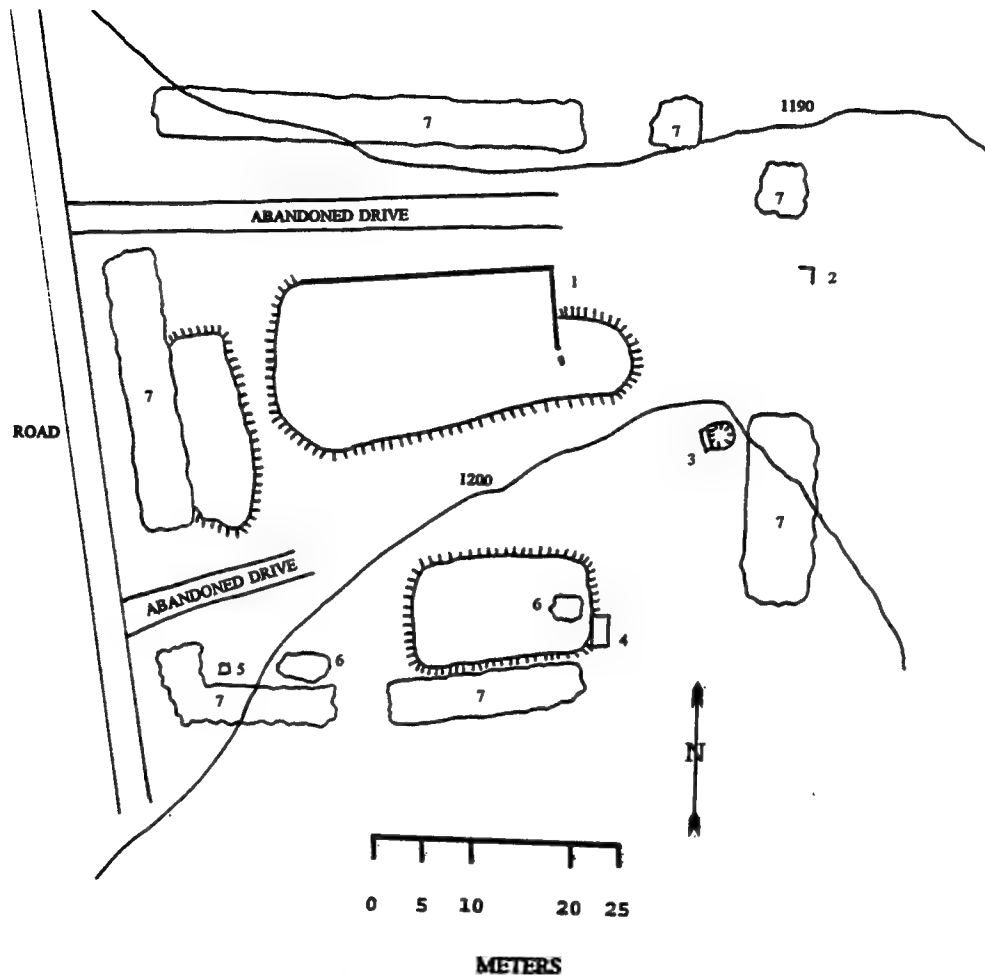
No cultural material was collected.

**Observations, Interpretations and Recommendations:**

The nature and distribution of remains indicate that this was a farmstead (shelterbelt, flowerbed, probable privy, sidewalk, outbuildings). It was bulldozed as part of the development of Milford Lake reservoir in 1964. County records show that George Taylor obtained the land patent in 1863 and transferred the deed to Melvin Barry in 1868 (Table A15).

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of

the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).



Numbered features on the map of site 14GE1172 are defined as follows:

- 1 - concrete barn foundation
- 2 - limestone foundation corner
- 3 - concrete wall with depression to the E
- 4 - concrete slab
- 5 - concrete fragment
- 6 - Iris bed
- 7 - Juniper trees

Figure 70: Map of Site 14GE1172 (Scale: 1 inch = 400 feet)



## 14GE4

**Site Name:** The Berry Mounds  
**Field No:** MAD16  
**Cultural Affiliation:** Plains Woodland/Plains Village  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Loess  
**Drainage:** Republican River  
**Recording Agency:** Muller & Schock 1964  
**Site Size:** 100 sq meters  
**Surface Visibility:** 10%  
**Slope:** 30%  
**Ground Cover Vegetation:** Tallgrass prairie  
**Survey Date:** 10 Oct 1993  
**Land Use:** Public use  
**Elevation:** 371 m (1217 ft) amsl

### Site Description:

This previously recorded burial mound site is in uplands on the north shore of Milford Lake just west of the mouth of Madison Creek. It was excavated by Schultz in the 1920s (see Hyman nd:28-30); he found artifacts from both the Schultz focus Plains Woodland period and the Smoky Hill focus of the Plains Village tradition. Muller & Schock (1964) evaluated the site in 1963. The present surveyors found only the chambered mound reported by Schultz, an overgrown ring of rocks 2 meters in diameter enclosing an open pit. It appears that the pit has been recently disturbed; possibly by artifact hunters or as part of military activity. Shovel tests near the mounds failed to reveal any additional cultural material or evidence of occupation.

No cultural material was collected.

### Observations, Interpretations and Recommendations:

The burial mounds are visible on the surface and so have been subject to weathering and disturbance by the public. The open pit inside the stones is an indication that the contents of one mound have been removed.

Any further testing of the mounds for National Register consideration falls under NAGPRA (the Native American Graves Protection Act) regulations. This is an option for this site, as it is potentially National Register eligible, although it must be stressed that Schultz seems to have emptied the mounds. As an alternative, avoidance and protection from potentially damaging uses are recommended for the mounds (e.g. by burying them).



Figure 71: Map of Site 14GE4 (Scale: 1 inch = 400 feet)

## 14GE1158

**Site Name:**

**Field No:** MAD17

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 800 sq meters

**Surface Visibility:** 30%

**Slope:** c. 30%

**Ground Cover Vegetation:** Tallgrass prairie

**Survey Date:** 10 Oct 1993

**Land Use:** Road

**Elevation:** 368 m (1207 ft) amsl

**Site Description and Survey Results:**

This site, a lithic scatter, extends 65 meters along the two-track natural road 10 meters west of 14GE4 (the Berry Mounds) in formerly cultivated uplands just west of the mouth of Madison Creek. Surveyors investigated the roadbed and eroded side banks and conducted shovel tests in the adjacent prairie grass. The tests uncovered no additional cultural material.

Sites 14GE4, 14GE26, 14GE27, and 14GE41 are all within 1/4 mile.

**Cultural Material Collected:**

14GE1158-0-1 Retouched secondary flake (1); Permian chert

14GE1158-0-2 Tertiary flakes (9); Permian chert

14GE1158-0-3 Tertiary flake (1); Heat-treated Permian chert

14GE1158-0-4 Shatter (2); Permian chert

**Observations, Interpretations and Recommendations:**

This light scatter of lithic material undoubtedly reflects the general occupation of this upland by prehistoric people, as suggested by the number of sites recorded nearby. Its location is clearly advantageous, as it lies at the confluence of the Republican River and Madison Creek. Although shovel testing did not reveal any other material, it is presumed that the entire upland hilltop has had scattered occupation.

The lack of material relative to the putative size of the site, absence of visible subsurface deposits and general loss of site integrity due to its former agricultural use suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14GE1158

----- 0 cm  
MONTANA SILT LOAM  
----- 60  
subsoils

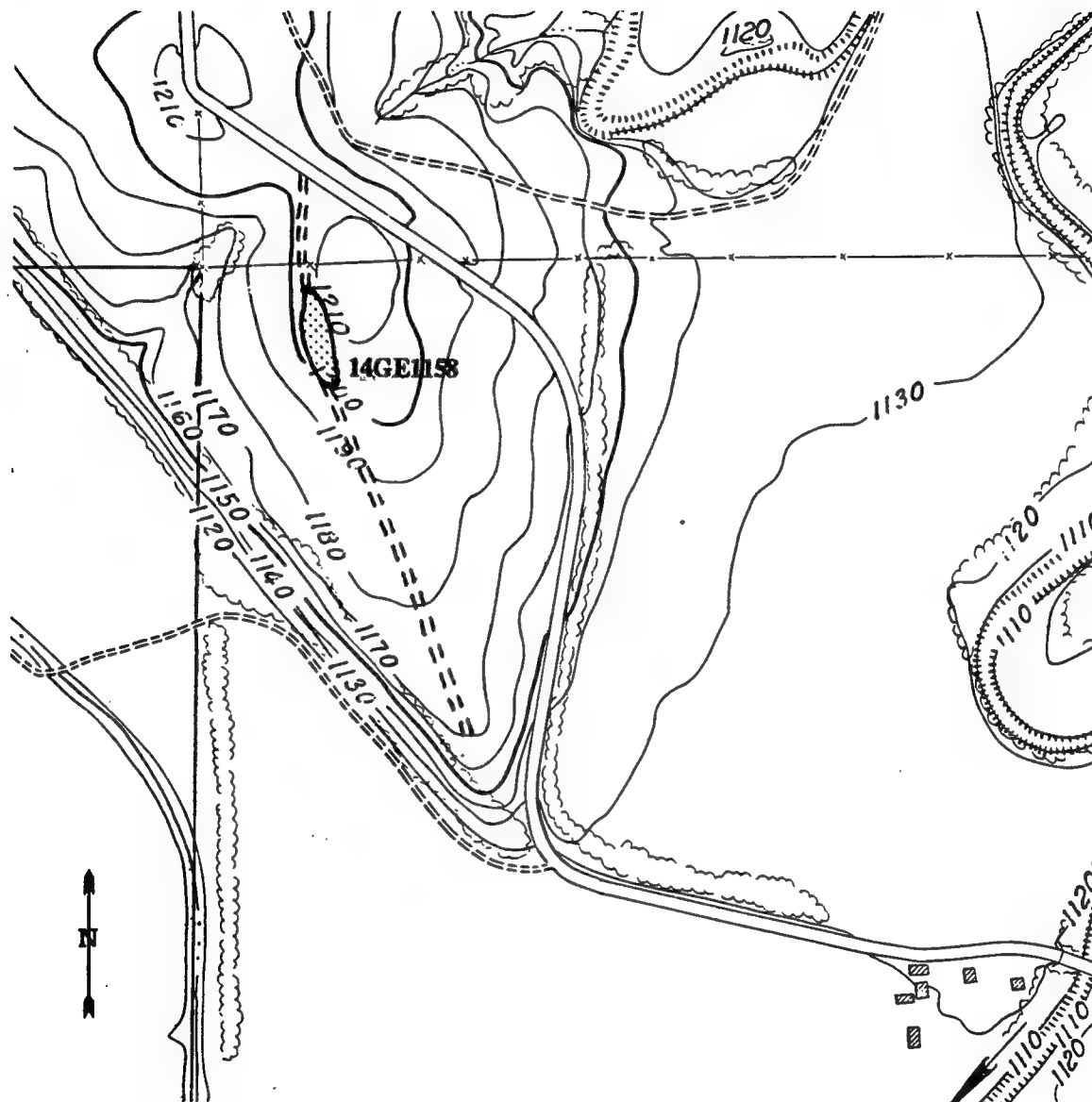


Figure 72: Map of Site 14GE1158 (Scale: 1 inch = 400 feet)

## 14GE1159

**Site Name:**

**Field No:** MAD18

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 50 x 25 m

**Surface Visibility:** 40%

**Slope:** 8-12%

**Ground Cover Vegetation:** Milo

**Survey Date:** 10 Oct 1993

**Land Use:** Cultivation

**Elevation:** 356 m (1168 ft) amsl

**Site Description and Survey Results:**

This site, a lithic scatter, is at the head of a draw on the west side of the peninsula in formerly cultivated lands near the mouth of Madison Creek. Surveyors examined the shoreline cutbanks, partly exposed ground surface and conducted shovel tests. The tests failed to reveal additional cultural material or other evidence of occupation.

Sites 14GE4, 14GE26, 14GE27, and 14GE41 are all within half a mile.

**Cultural Material Collected:**

14GE1159-0-1 Tertiary flake (1); Permian chert

14GE1159-0-2 Tertiary flake (1); White chert

14GE1159-0-3 Shatter (1); Oxidized or heat-treated cherty limestone

**Observations, Interpretations and Recommendations:**

This small lithic scatter probably represents a brief occupation, associated with the resources of an intermittent upland stream in the draw.

The lack of material, absence of visible subsurface deposits, and general loss of site integrity due to agriculture suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14GE1159

----- 0 cm  
HASTINGS SILTY CLAY LOAM,  
8-12% SLOPES  
grayish brown, clayey  
silt  
----- 12  
gray, silty clay  
----- 50

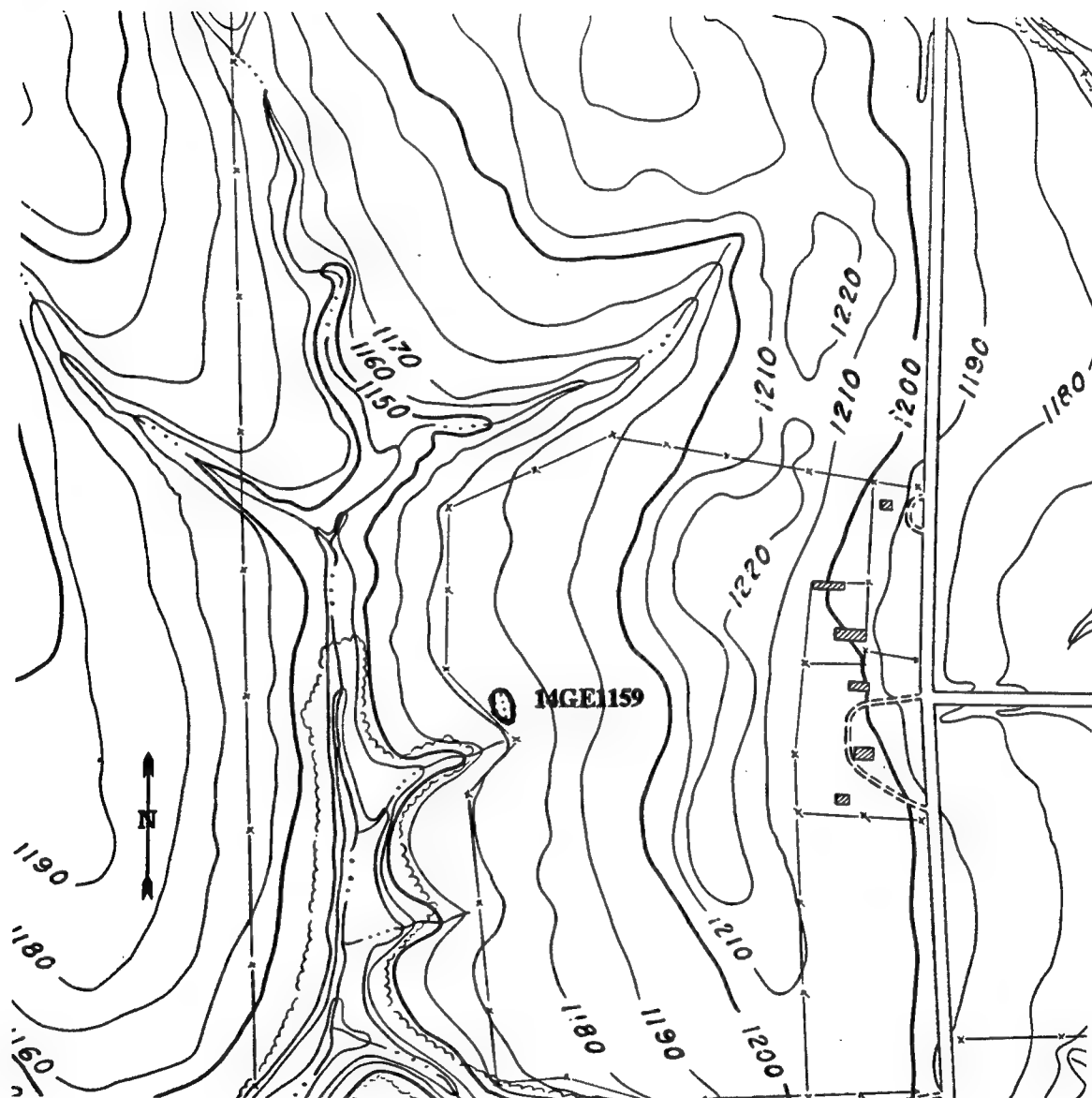


Figure 73: Map of Site 14GE1159 (Scale: 1 inch = 400 feet)

## 14GE1168

**Site Name:**

**Field No:** MAD19

**Cultural Affiliation:** EuroAmerican

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Permian Limestone

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 3 acres

**Surface Visibility:** 20 %

**Slope:** 0-8%

**Ground Cover Vegetation:** Tallgrass prairie

**Survey Date:** 11 Oct 1993

**Land Use:** Public use

**Elevation:** 351 m (1152 ft) amsl

**Site Description and Survey Results:**

This farmstead site in the uplands just south and east of the Madison Creek bridge on US 77. It consists of five foundations, 2 silo bases, and a limestone wall which mark a former farmstead. The site straddles the draw south of the approach to the east end of the Madison Creek bridge. The area is heavily overgrown by prairie recently damaged by flood waters.

Numbered features on the site map are defined as follows:

- 1 - concrete foundation
- 2 - concrete foundation
- 3 - two cement wall fragments
- 4 - limestone wall with fragment of wood and retaining bolts
- 5 - concrete and limestone rubble walls (barn foundation)
- 6 - limestone rubble foundation
- 7 - concrete silo base
- 8 - concrete silo base

**Cultural Material Collected:**

14GE1168-0-1 Ceramic: Stoneware crock body fragment, gray, 1

**Observations, Interpretations and Recommendations:**

The concrete construction suggests a 20th century date for most of the features; the limestone rubble and foundation material could have come from a late 19th century building. The stoneware fragment is consistent with this range of occupation. County records show that B.E. Fullington received a patent to the land in 1858 but Charles Streeter obtained the deed in 1886. It is likely that these structures are associated with the latter owner.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not

embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).



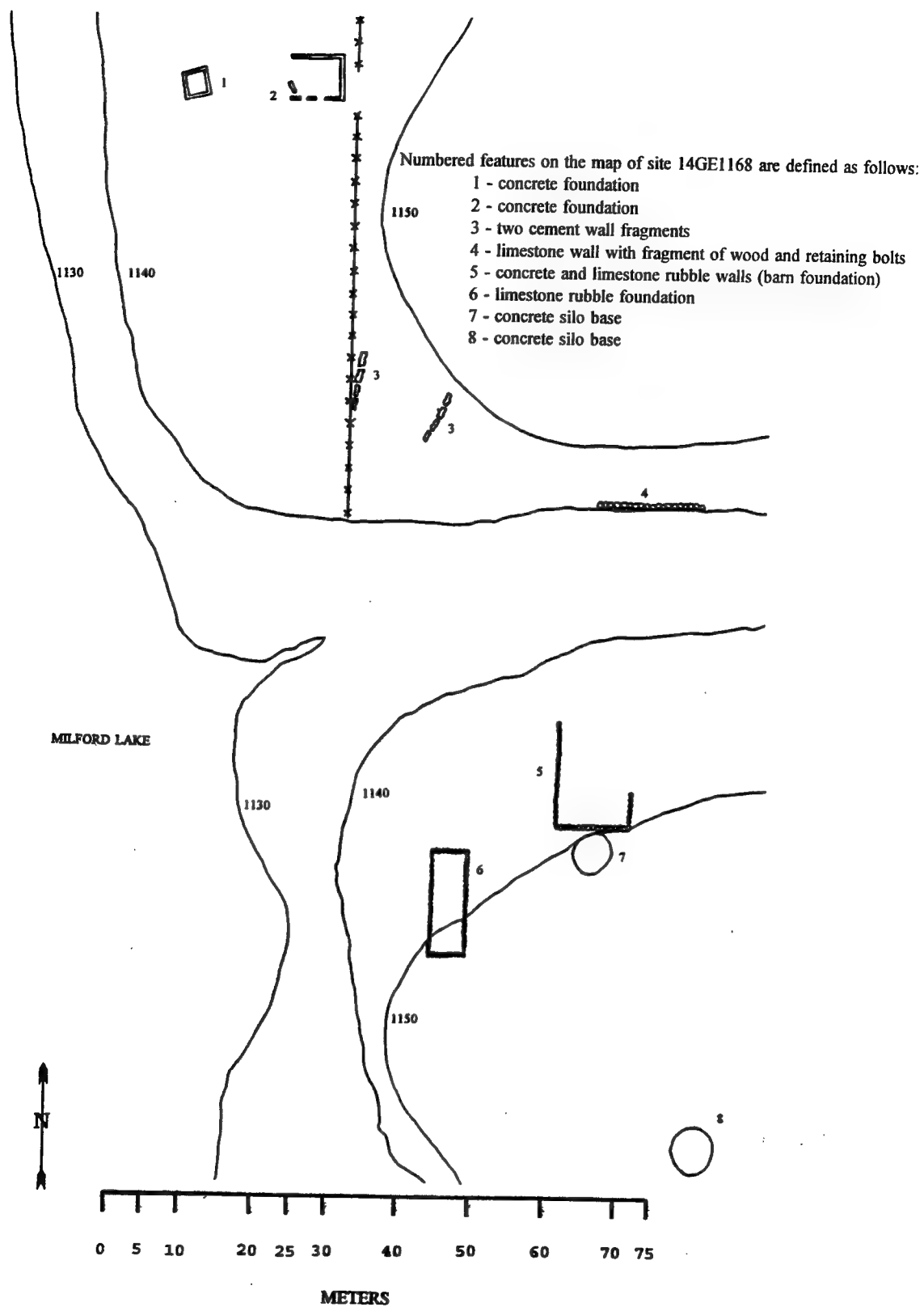


Figure 74: Map of Site 14GE1168 (Scale: 1 inch = 400 feet)

## 14GE1160

**Site Name:**

**Field No:** MAD20

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Permian Limestone

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** Spot Find

**Surface Visibility:** 70%

**Slope:** 15-40%

**Ground Cover Vegetation:** Grass, flood-scoured

**Survey Date:** 11 Oct 1993

**Land Use:** Public use

**Elevation:** 355 m (1168 ft) amsl

**Site Description and Survey Results:**

This site, the isolated find of the midsection of a Smoky Hill jasper knife, is on a heavily scoured fan-like lobe on the east side of the Madison Creek inlet. Surveyors searched the well-exposed ground surface and conducted shovel tests, but failed to uncover any additional cultural material or other evidence of occupation. The midsection of a stainless steel knife lay nearby.

Site 14GE1161 is across the draw to the south. Sites 14GE22, 14GE23, 14GE24, and 14GE25 are under lake water to the west and south.

**Cultural Material Collected:**

14GE1160-0-1 Beveled bifacial knife fragment (1); Invasive retouch; Smoky Hill Jasper

14GE1160-0-2 Serrated steel knife fragment (1)

**Description of 14GE1160-0-1 Beveled bifacial knife fragment (Figure 75):**

This triangular blade fragment is snapped in the middle. The end of the tip is also snapped. Both faces are flat with large, expanding flake scars that extend from one lateral edge nearly to the opposite edge. This opposite edge is steeply bevelled on one face. Both lateral edges are step-fractured, particularly near the tip.

**Dimensions:** 35 mm, width at the snapped proximal end.  
7 mm, thickness.

**Observations, Interpretations and Recommendations:**

The stone tool may have been dropped or discarded, or it may be part of an occupation site, the rest of which has either been washed away by the flood or is buried upslope. As the land was formerly cultivated, however, it is likely that any concentration of lithic material near this find would be evident on the surface.

The lack of material, absence of visible subsurface deposits, and the general loss of site integrity due to agriculture and flood erosion suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

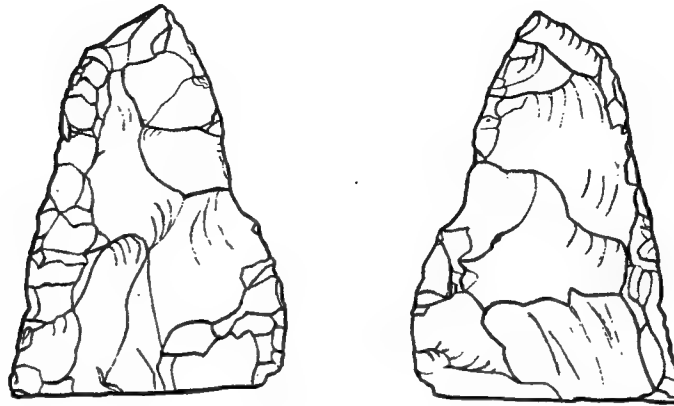


Figure 75: Beveled bifacial knife fragment.

Soil profile: 14GE1160

----- 0 cm

SOGN COMPLEX

dark grayish brown,  
clayey loam

----- 26

limestone

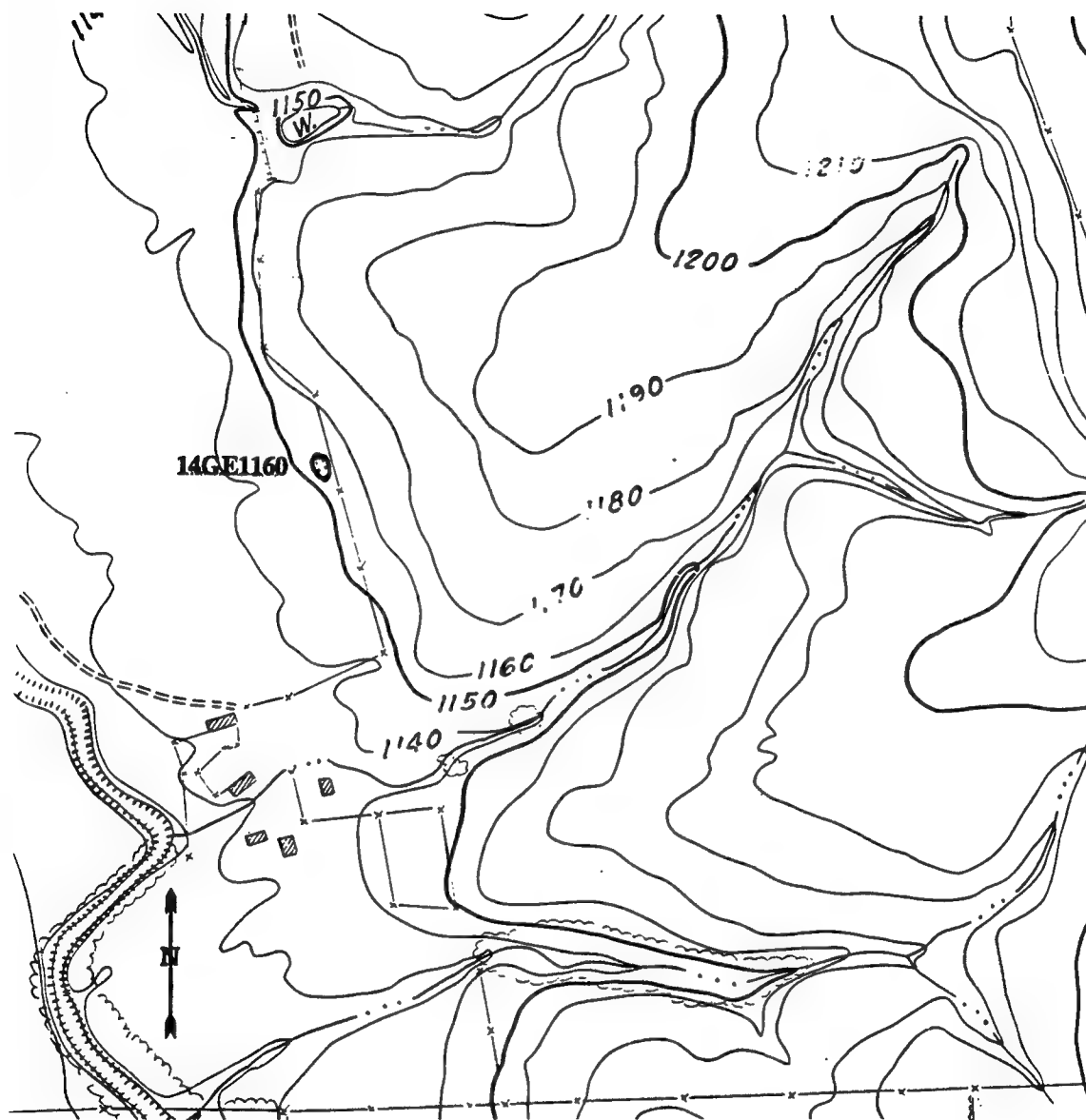


Figure 76: Map of Site 14GE1160 (Scale: 1 inch = 400 feet)

## 14GE1161

**Site Name:**

**Field No:** MAD21

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 2 x 4 m

**Surface Visibility:** 70%

**Slope:** 4-8%

**Ground Cover Vegetation:** Tallgrass prairie scoured by flood

**Survey Date:** 11 Oct 1993

**Land Use:** Public use

**Elevation:** 356 m (1168 ft) amsl

**Site Description and Survey Results:**

This site is a small lithic scatter on a formerly cultivated point of land extending westward into the Madison Creek bay of Milford Lake. The scatter was very well defined, a dense concentration of heat treated Flint Hills chert flakes. No other cultural material, such as introduced rock, was evident.

Site 14GE1160 is across the draw to the north. Nearby sites 14GE22, 14GE23, 14GE24, and 14GE25 are all now under water in the bay to the west.

A test excavation (50 cm square) revealed that the limestone cap lay only a few centimeters below the surface. No additional material was found in this test and no subsurface deposits could be identified.

**Cultural Material Collected:**

- 14GE1161-0-1 Primary flakes (2); Heat-treated Permian chert
- 14GE1161-0-2 Secondary flake (1); Heat-treated Permian chert
- 14GE1161-0-3 Tertiary flakes (11); Heat-treated Permian chert
- 14GE1161-0-4 Shatter (5); Heat-treated Permian chert
- 14GE1161-0-5 Retouched flake fragments (2); Heat-treated Permian chert
- 14GE1161-0-6 Tertiary flake (1); Permian chert
- 14GE1161-0-7 Shatter (4); Permian chert
- 14GE1161-0-8 Shatter (1); Oxidized Cherty limestone

**Observations, Interpretations and Recommendations:**

The well-defined edges of this lithic scatter and the narrow range of material suggest that this was a briefly occupied spot, probably where a knapper made and sharpened tools.

The lack of material, absence of visible subsurface deposits, and general loss of site integrity due to agriculture and flood erosion suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14GE1161

----- 0 cm  
GEARY SILT LOAM,  
4-8% SLOPES  
----- 3  
limestone, gravel cap  
----- 50

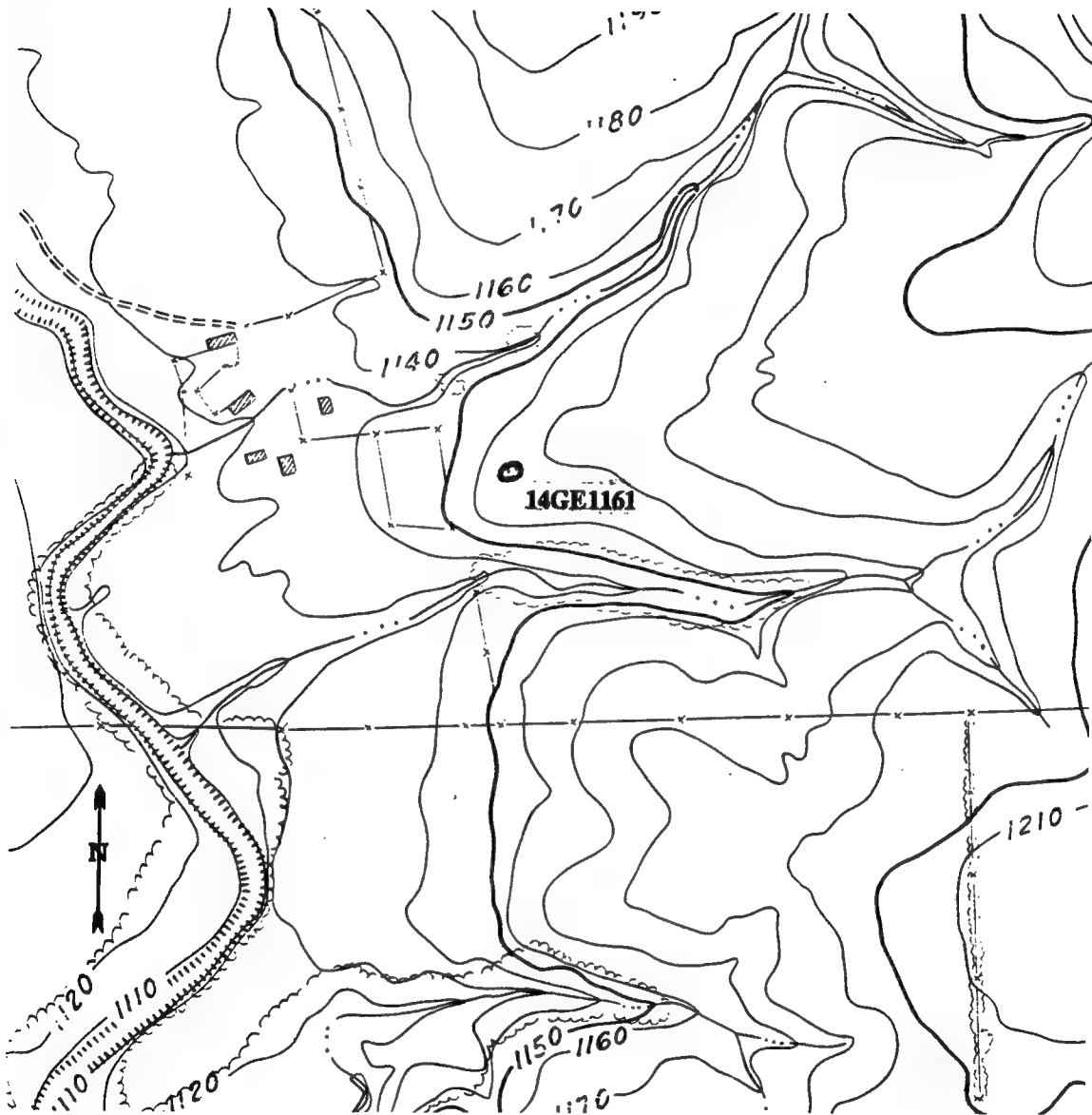


Figure 77: Map of Site 14GE1161 (Scale: 1 inch = 400 feet)

## 14GE1162

**Site Name:**

**Field No:** MAD23

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Permian Limestone

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 20 x 50 m

**Surface Visibility:** 30%

**Slope:** 15-20%

**Ground Cover Vegetation:** Tallgrass prairie

**Survey Date:** 11 Oct 1993

**Land Use:** Public use

**Elevation:** 384 m (1260 ft) amsl

### **Site Description and Survey Results:**

This site, a scatter of tools and flakes, is exposed along an old dirt road at the highest elevation in the uplands on the east side of Madison Creek inlet. The area is partly treed and is surrounded by hayfields. Modern disturbance in the area (agricultural and military) indicates that glacial till is relatively near the surface. Surveyors examined the road tracks and eroded margins and conducted shovel tests in the grass-covered areas on either side of the road. The tests did not uncover additional material or other evidence of occupation.

Sites 14GE22, 14GE23, 14GE24, and 14GE25 are all now under water in the bay to the southwest. Sites 14GE51 and 14GE28 are located a half mile north.

### **Cultural Material Collected:**

14GE1162-0-1 Projectile point midsection (1); Invasive retouch; Heat-treated Permian chert

14GE1162-0-2 Retouched flake fragment/Graver (1); Minimal retouch on broken edge of flake;

Retouched projection to produce graver; Permian chert

14GE1162-0-3 Retouched flake fragment (1); Combination spokeshave/scrapper; Steep retouch on all edges but one; Permian chert

14GE1162-0-4 Tertiary flakes (14); Permian chert

14GE1162-0-5 Tertiary flake (1); Smoky Hill Jasper

14GE1162-0-6 Shatter (24); Permian chert

### **Observations, Interpretations and Recommendations:**

This high uplands site extends in a relatively light scatter along a dirt track. Such high sites, relatively far from running water, are unusual for the area. They may also contain the earliest cultural deposits, as they are less subject to alluvial and colluvial aggradation, or erosion, than lowlands sites.

The relative lack of material for this large area, the absence of visible subsurface deposits, and the general loss of site integrity due to agriculture suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14GE1162

----- 0 cm  
 SOGN COMPLEX  
 clayey A  
 ----- 15  
 grading to reddish B  
 ----- 60

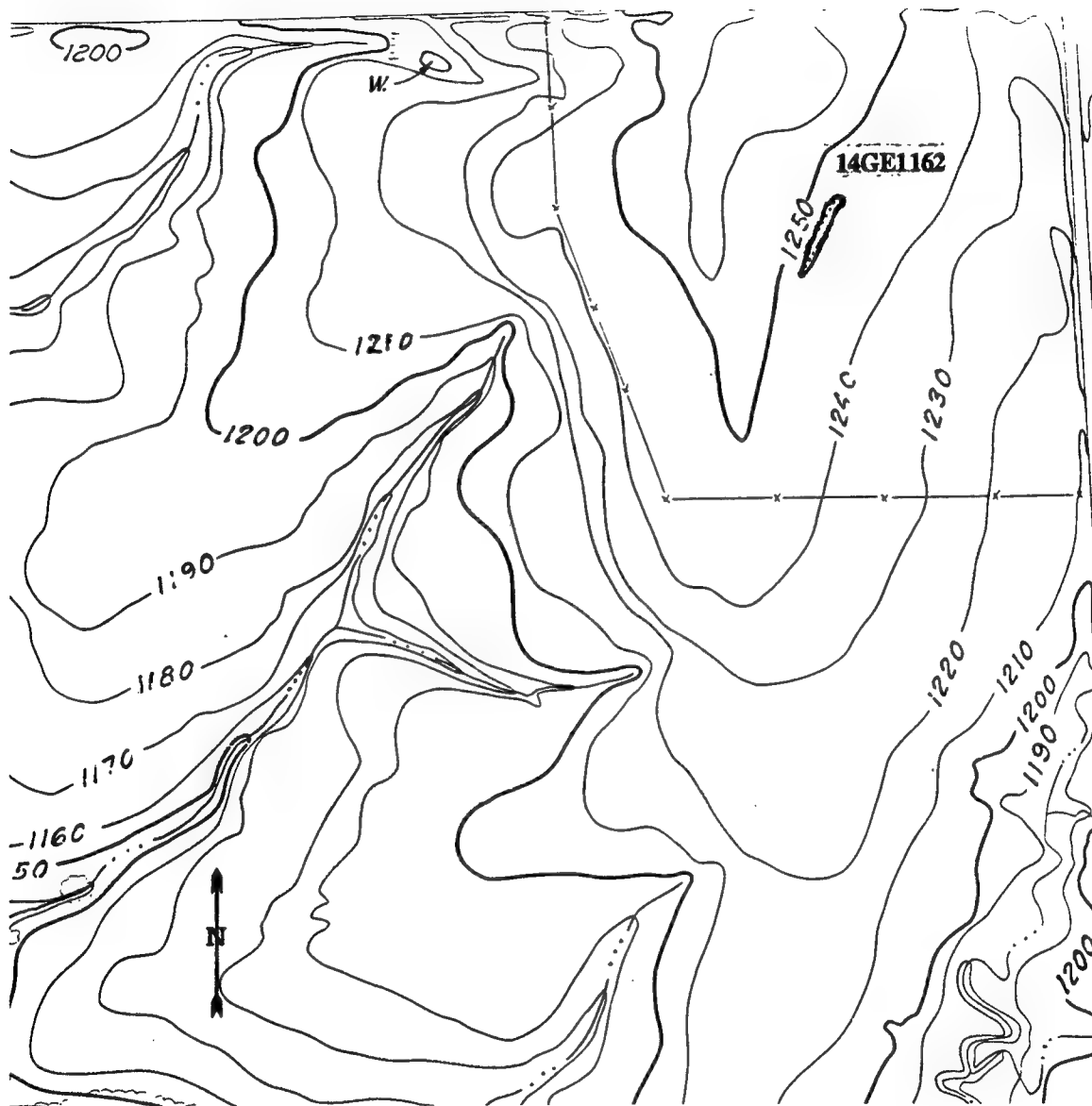


Figure 78: Map of Site 14GE1162 (Scale: 1 inch = 400 feet)



## 14GE1163

**Site Name:**

**Field No:** MAD24

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 20 x 10 m

**Surface Visibility:** 30%

**Slope:** 4-8%

**Ground Cover Vegetation:** Flood scoured tallgrass prairie

**Survey Date:** 11 Oct 1993

**Land Use:** Public use

**Elevation:** 362 m (1188 ft) amsl

**Site Description and Survey Results:**

This small lithic scatter is at the edge of a formerly cultivated, flood-scoured lobe near a cliff on the NW side of the nearest peninsula to the mouth of Madison Creek bay. The area has no direct access to the creek valley because of the cliff. Surveyors examined eroded patches in the ground surface, conducted shovel tests, and did a small test excavation (50 cm square), but these efforts did not reveal any additional cultural material or other evidence of occupation. The test excavation only revealed that the limestone cap is within 10 cm of the surface.

It is south of site 14GE1161. Sites 14GE22, 14GE23, 14GE24, and 14GE25 are all now under water in the bay to the north and west.

**Cultural Material Collected:**

14GE1163-0-1 Scraper/Spokeshave (1); Steep retouch on distal end, notch on left lateral;  
Permian chert

14GE1163-0-2 Retouched flake fragment/Scraper/Spokeshave (1); Steep retouch on one edge,  
notch on opposing edge; Permian chert

14GE1163-0-3 Retouched flake (1); Marginal on left lateral edge; Permian chert

14GE1163-0-4 Utilized shatter (1); Permian chert

14GE1163-0-5 Shatter (1); Permian chert

**Observations, Interpretations and Recommendations:**

This small lithic scatter appears to be a brief occupation, either a temporary campsite, lookout or processing site (food or lithics) associated with the resources of Madison Creek below.

The lack of material, absence of visible subsurface deposits and general loss of site integrity due to agriculture and flood erosion suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14GE1163

----- 0 cm  
HASTINGS SILTY CLAY LOAM,  
4-8% SLOPES  
undifferentiated dark topsoil  
----- 20  
limestone cap

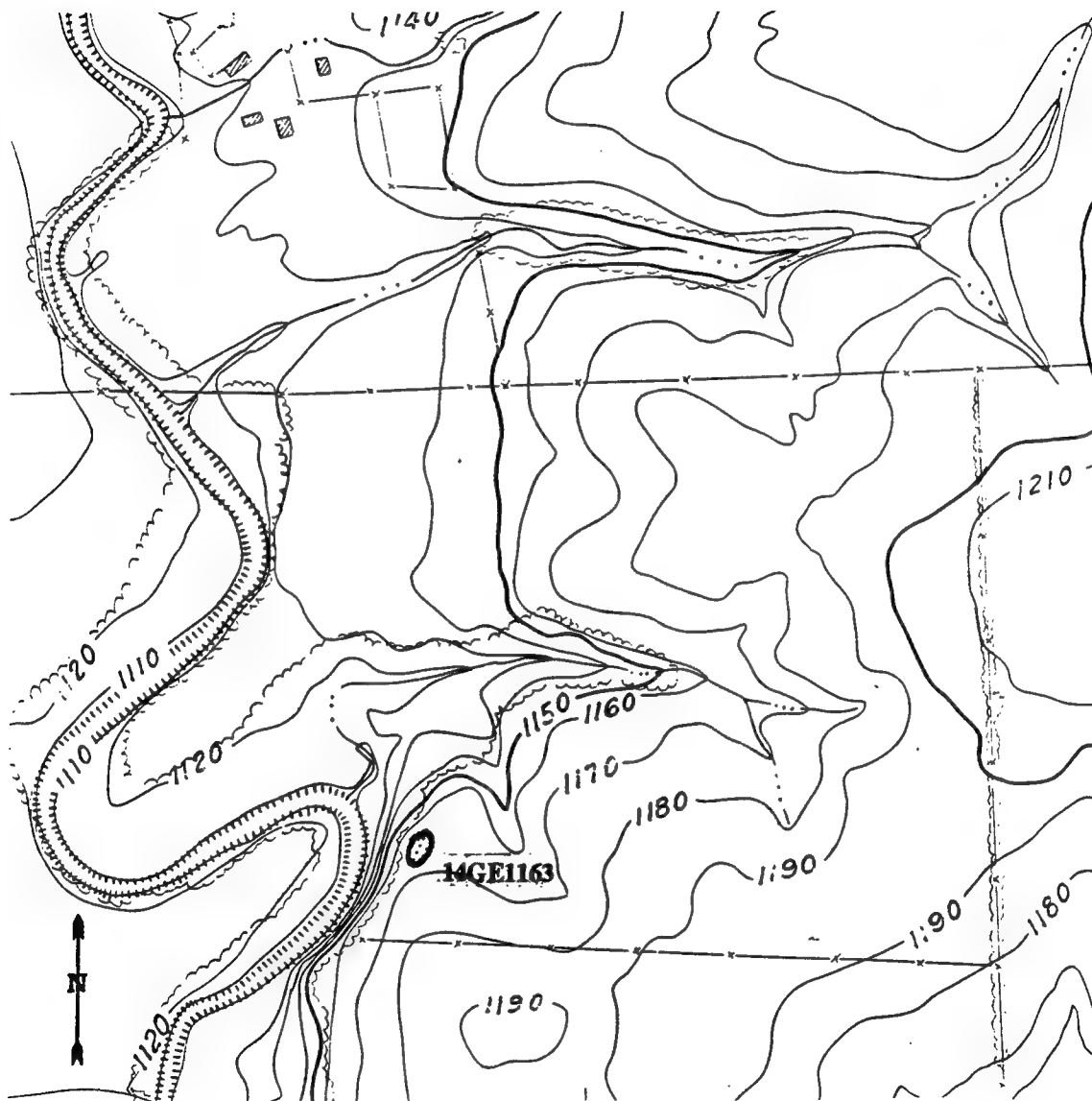


Figure 79: Map of Site 14GE1163 (Scale: 1 inch = 400 feet)

**Site Name:**

**Field No:** MAD25

**Cultural Affiliation:** EuroAmerican

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Alluvium

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 2.75 acres

**Surface Visibility:** 10%

**Slope:** 0-1%

**Ground Cover Vegetation:** Tallgrass prairie

**Survey Date:** 12 Oct 1993

**Land Use:** Public use

**Elevation:** 356 m (1168 ft) amsl

**Site Description and Survey Results:**

This farmstead site is on a terrace at a fork in Madison Creek just north of the old highway 77. It consists of limestone foundations (one with mortar), concrete pad fragments, a limestone well or cistern, and a stone wall. Surveyors also observed molded brick fragments.

Numbered features on the site map are defined as follows:

- 1 - limestone foundation corner
- 2 - concrete pad
- 3 - limestone well or cistern
- 4 - loose limestone foundation
- 5 - limestone foundation
- 6 - limestone foundation fragment, two wooden support posts
- 7 - limestone foundation
- 8 - limestone fence
- 9 - row of cedar trees

No cultural material was collected.

**Interpretation, Evaluation and Recommendations:**

The numerous limestone foundations and limestone well are consistent with late 19th century construction. Hand-molded bricks suggest a date before 1920. A. Younkin obtained the patent; the deed passed to B. E. Fullington in 1861, then to C. M. Gifford in 1872. The Gifford family retained ownership until the property was expropriated in 1965 for the Milford Lake project.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of

the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).

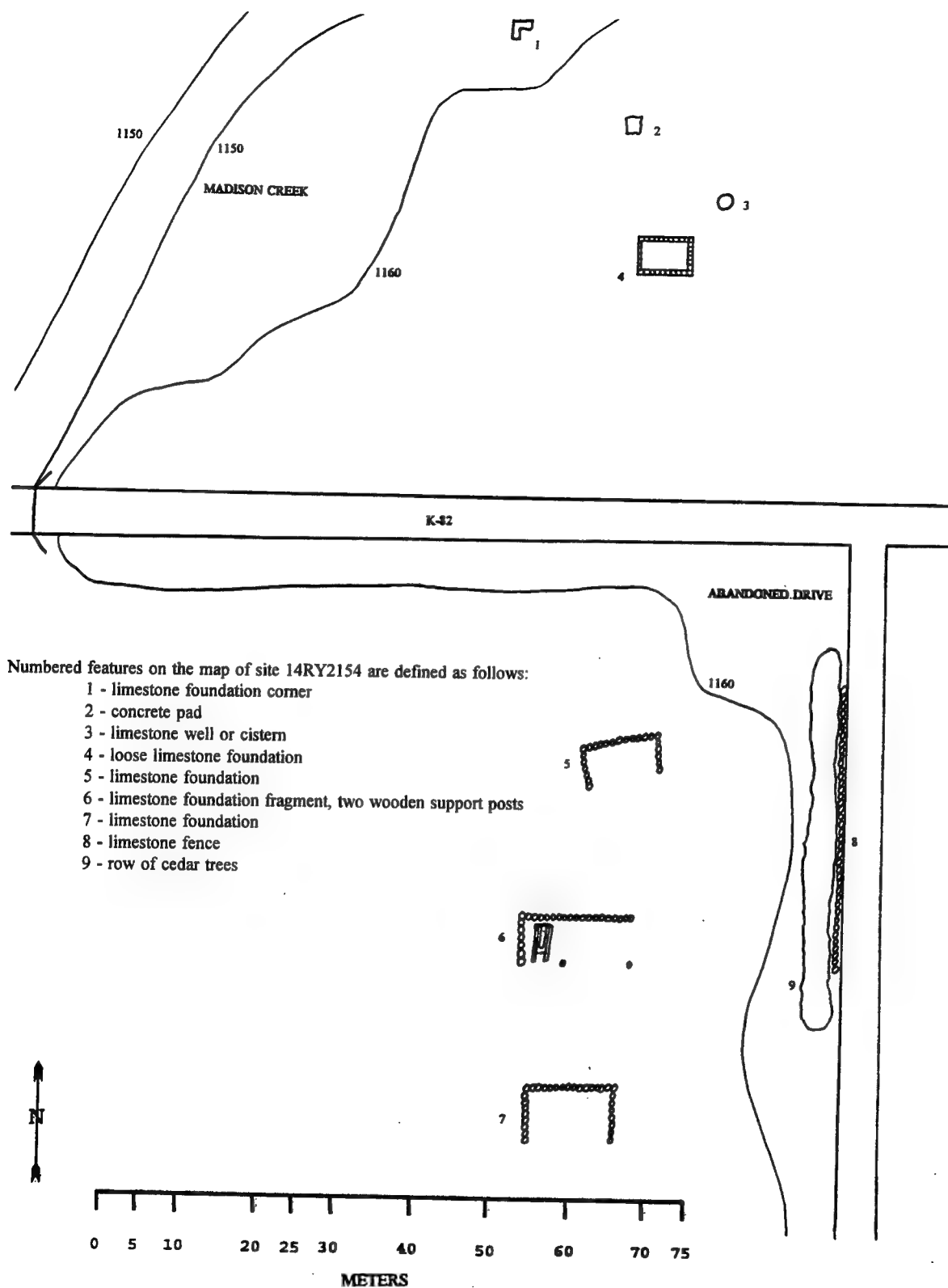


Figure 80: Map of Site 14RY2154 (Scale: 1 inch = 400 feet)

**Site Name:**  
**Field No:** MAD26  
**Cultural Affiliation:** EuroAmerican  
**Topographic Setting:** Floodplain  
**Parent Material:** Alluvium  
**Drainage:** Republican River  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** 5 x 10 m  
**Surface Visibility:** 20%  
**Slope:** Nearly level  
**Ground Cover Vegetation:** Tallgrass prairie  
**Survey Date:** 12 Oct 1993  
**Land Use:** Public use, military maneuvers  
**Elevation:** 356 m (1168 ft) amsl

**Site Description and Survey Results:**

This site consists of cement barn foundations found in a deep bend of Dry Creek. In the construction of this barn or shed, nail kegs and a can had been used as forms for the base of cement post supports.

Numbered features on the site map are defined as follows:

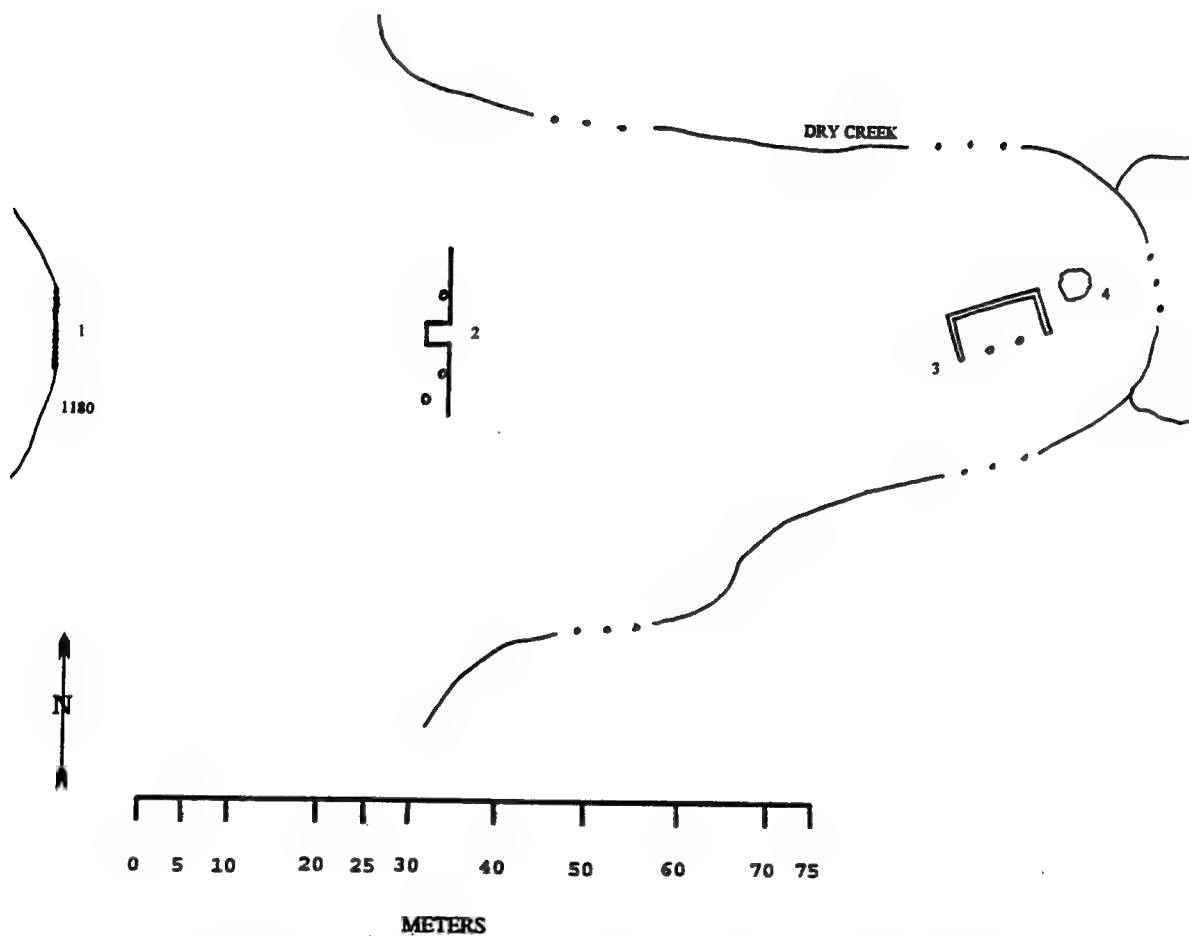
- 1 - stone wall on hill
- 2 - poured cement cellar
- 3 - cement barn foundation with two concrete support post bases
- 4 - water tank

No cultural material was collected.

**Observations, Interpretations and Recommendations:**

The cement foundations for this barn or shed were probably poured in the first part of the 20th century. For many years in the 1940s and 1950s, this property was rented by members of the Sharp family (Raymond Sharp, pers. comm.). County records show that this farmstead up Dry Creek is on land obtained by A.C. Streeter in 1877. The Streeter family owned it until 1896 when it was deeded to B. F. Shaner; it remained in the Shaner family until expropriated in 1965.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).



Numbered features on the map of site 14RY2155 are defined as follows:

- 1 - stone wall on hill
- 2 - poured cement cellar
- 3 - cement barn foundation with two concrete support post bases
- 4 - water tank

Figure 81: Map of Site 14RY2155 (Scale: 1 inch = 400 feet)

**Site Name:**  
**Field No:** MAD27  
**Cultural Affiliation:** EuroAmerican  
**Topographic Setting:** Slope  
**Parent Material:** Colluvium  
**Drainage:** Republican River  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** 3 acres  
**Surface Visibility:** 20%  
**Slope:** 4-8%  
**Ground Cover Vegetation:** Tallgrass prairie  
**Survey Date:** 12 Oct 1993  
**Land Use:** Public use, military maneuvers  
**Elevation:** 364 m (1194 ft) amsl

**Site Description and Survey Results:**

This site sits on level ground along the edge of a rocky hillslope near the east bank of Madison Creek. It consists of 3 partial concrete and limestone foundations, 1 concrete slab and piles of rubble. This is all that remains from 9 structures shown on the USGS topographic map of 1964.

Numbered features on the site map are defined as follows:

- 1 - limestone foundation wall
- 2 - concrete wall with concrete floor
- 3 - concrete with limestone rubble
- 4 - concrete pad
- 5 - concrete rubble

**Cultural Material Collected:**

14RY2156-0-1 Ceramic: Earthenware crock rim with handle fragment, tan/brown

**Observations, Interpretations and Recommendations:**

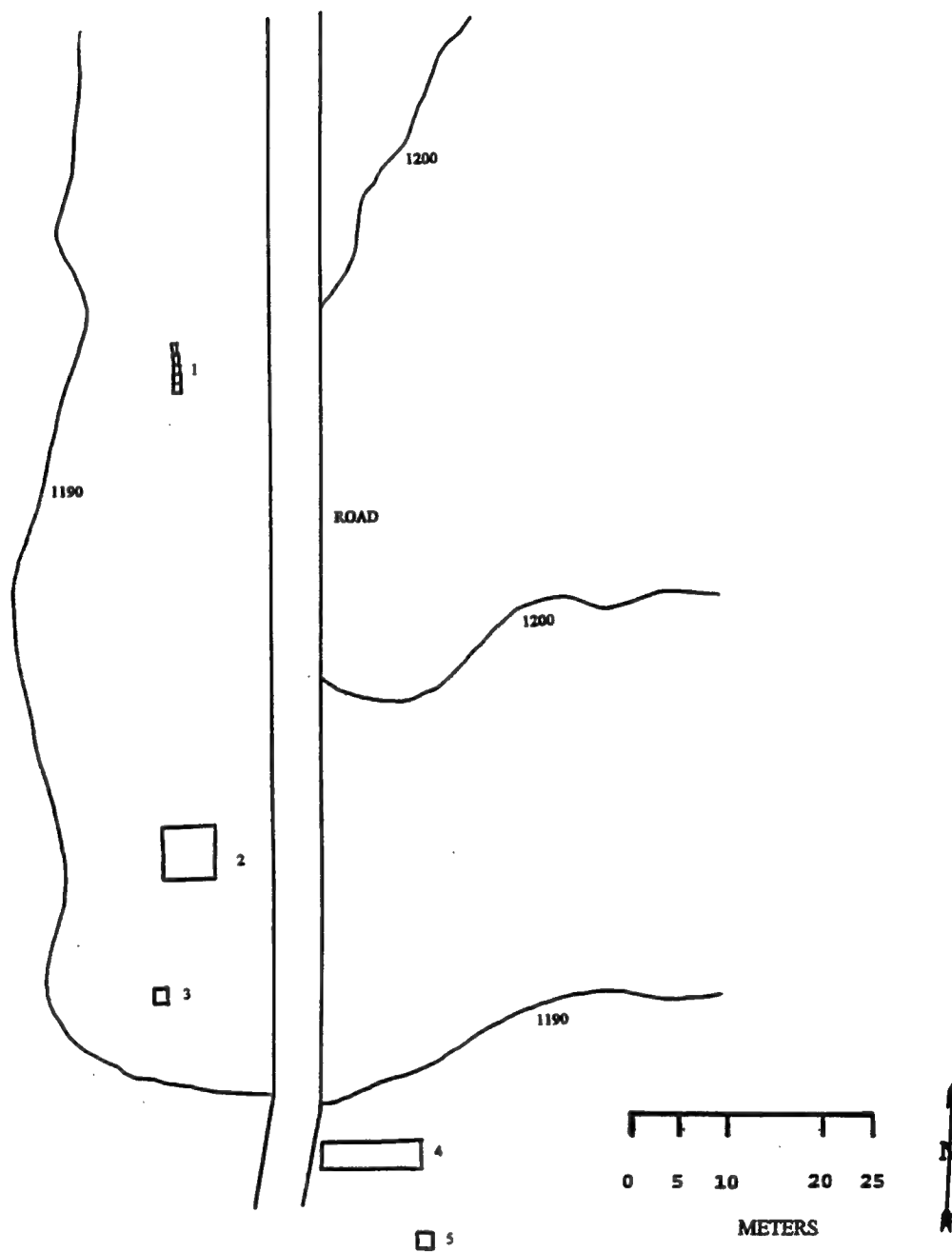
The presence limestone as well as concrete foundations suggest building construction beginning in the late 19th century. The earthenware crock likely dates to the same period.

County records show that this farmstead is on land which J. P. Goodwin acquired by patent, then deeded to H. C. Whiting in 1865. By 1870 it went from George Avery to L. C. Streeter. By 1896, the Streeter family deeded it to B. F. Shaner, whose family retained possession until the property was expropriated in 1965. This land had houses on both sides of the road in the 1940s and 1950s (Raymond Sharp, pers. comm.). These houses may have been rented. Several families named Sharp lived along this road.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not



embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).



Numbered features on the map of site 14RY2156 are defined as follows:

- 1 - limestone foundation wall
- 2 - concrete wall with concrete floor
- 3 - concrete with limestone rubble
- 4 - concrete pad
- 5 - concrete rubble

Figure 82: Map of Site 14RY2156 (Scale: 1 inch = 400 feet)

## 14RY2153

**Site Name:**  
**Field No:** MAD28  
**Cultural Affiliation:** Prehistoric  
**Topographic Setting:** Terrace  
**Parent Material:** Alluvium  
**Drainage:** Republican River  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** 10 x 5 m  
**Surface Visibility:** 40%  
**Slope:** 0-1%  
**Ground Cover Vegetation:** Milo  
**Survey Date:** 12 Oct 1993  
**Land Use:** Cultivation  
**Elevation:** 356 m (1168 ft) amsl

### Site Description and Survey Results:

This site, a retouched flake and piece of debitage, lay in a milo field on a terrace on the west bank of Madison Creek. Surveyors examined the cultivated surface carefully and conducted shovel tests. The tests failed to reveal any additional cultural material or other evidence of occupation.

### Cultural Material Collected:

14RY2153-0-1 Retouched flake fragment (1); Marginal retouch on distal end; Heat-treated Permian chert  
14RY2153-0-2 Secondary flake (1); Permian chert

### Observations, Interpretations and Recommendations:

This small lithic scatter likely represents a brief occupation, possibly a small processing site (food or lithic) associated with the resources of Madison Creek.

The lack of material, absence of visible subsurface deposits, and general loss of site integrity due to agriculture suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14RY2153

----- 0 cm  
READINGS SILT LOAM,  
0-1% SLOPES  
----- 60

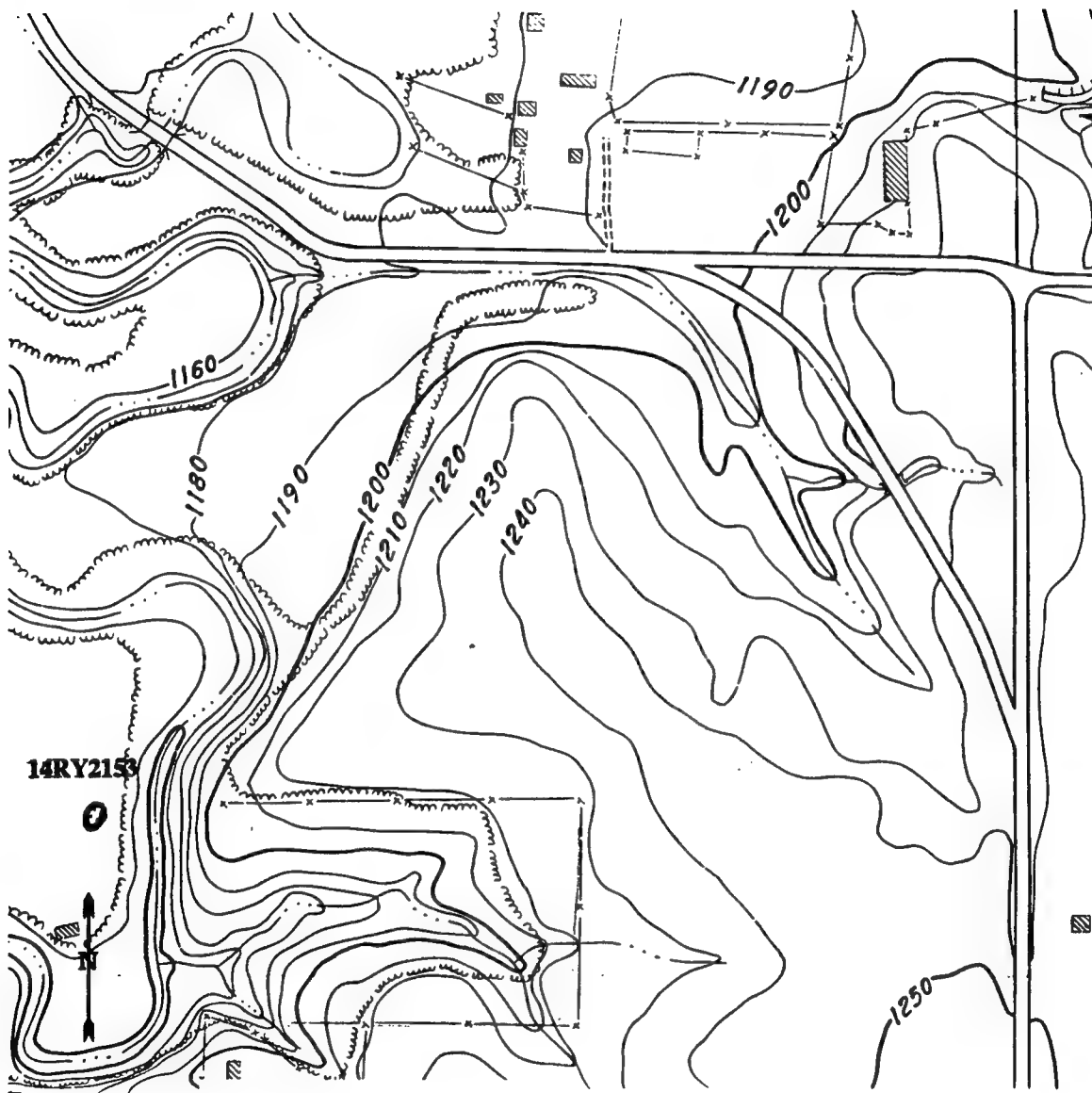


Figure 83: Map of Site 14RY2153 (Scale: 1 inch = 400 feet)

**Site Name:****Field No:** MAD29**Cultural Affiliation:** EuroAmerican**Topographic Setting:** Flint Hills Upland**Parent Material:** Loess**Drainage:** Republican River**Recording Agency:** Archaeology Lab, USD**Site Size:** Undetermined**Surface Visibility:** 10%**Slope:** 1-4%**Ground Cover Vegetation:** Tallgrass prairie**Survey Date:** 12 Oct 1993**Land Use:** Public use**Elevation:** 367 m (1204 ft) amsl**Site Description and Survey Results:**

This agricultural site is a set of two small ovoid extensions of a drystone wall that extends along the western edge of the Madison Creek valley. The structures, the same height as the wall, are approximately 3 meters across.

Numbered features on the site map are defined as follows:

- 1 - limestone wall
- 2 - small circular limestone structure

No cultural material was collected.

**Observations, Interpretations and Recommendations:**

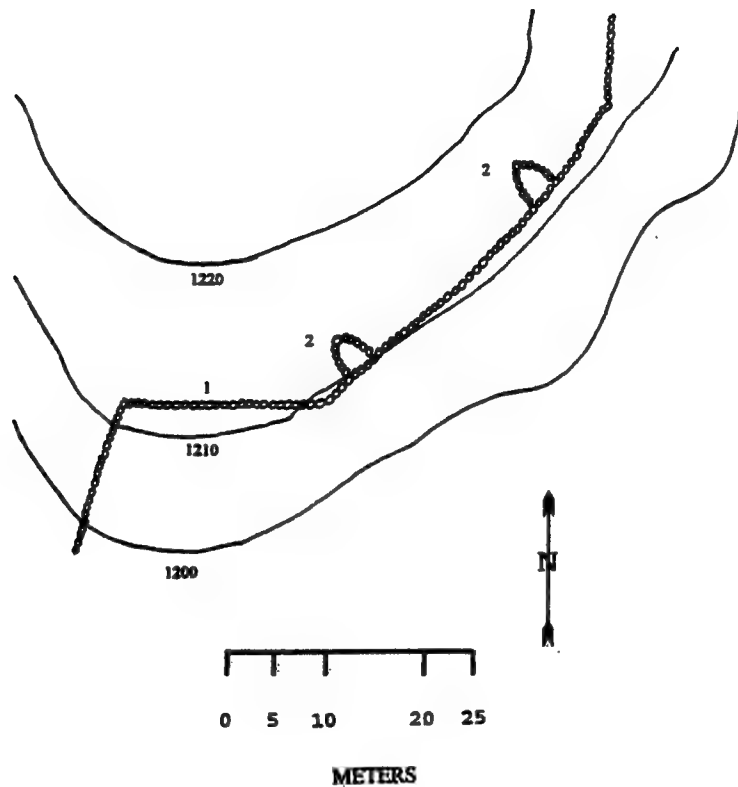
The function of these stone structures is unknown. Future investigations should consider some aspect of agricultural practice. The stone wall with circular, corral-like enclosures, found at the crest of a steep hill, bear a strong resemblance to walls with sheep-pens seen in Scotland. There was a small sheep industry in this area in the late 19th century (see, for example, the *First Biennial Report* of the Kansas State Board of Agriculture (Kansas State Board of Agriculture 1878: 148).

A military connection is also possible (ie. these structures built for defensive purposes), given the location of the property.

County records show that the property was acquired from the K. P. Railway by L.A. Streeter in 1880. In 1896 it was deeded to B. F. Shaner and remained in that family until expropriated in 1965 (Table A16).

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of

the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).



Numbered features on the map of site 14RY2157 are defined as follows:  
1 - limestone wall  
2 - small circular limestone structure

Figure 84: Map of Site 14RY2157 (Scale: 1 inch = 400 feet)

## 14RY2158

**Site Name:**

**Field No:** MAD30

**Cultural Affiliation:** EuroAmerican

**Topographic Setting:**

**Parent Material:** Permian Limestone

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 15 x 20 m

**Surface Visibility:** 20%

**Slope:** 5-20%

**Ground Cover Vegetation:** Tallgrass prairie

**Survey Date:** 12 Oct 1993

**Land Use:** Public use

**Elevation:** 364 m (1194 ft) amsl

**Site Description and Survey Results:**

This refuse dump site is in a quarry pit, presumably excavated to supply the rocks for a stone fence line above, between hills on the west side of the Madison Creek valley. A mixture of household and agricultural material from the mid-twentieth century was observed such as rusty tin cans, agricultural machinery parts, modern glass bottle fragments, and broken household ceramics.

**Cultural Material Collected:**

14RY2158-0-1-1 Ceramic: Porcelain wall decoration, birdhouse fragment with 2 blue birds

**Observations, Interpretations and Recommendations:**

The cultural material observed in the dump came from the mid-twentieth century. The quarry pit in which this dump is found may date from the late 19th century and be the source of the limestone used to construct the wall and circular enclosures following the crest of the hill above (site 14RY2157).

Ownership of the land is first recorded in 1880 (L. A. Streeter); he transferred it to B. F. Shaner in 1896 and it remained in that family until it was expropriated in 1965 (Table A16).

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).

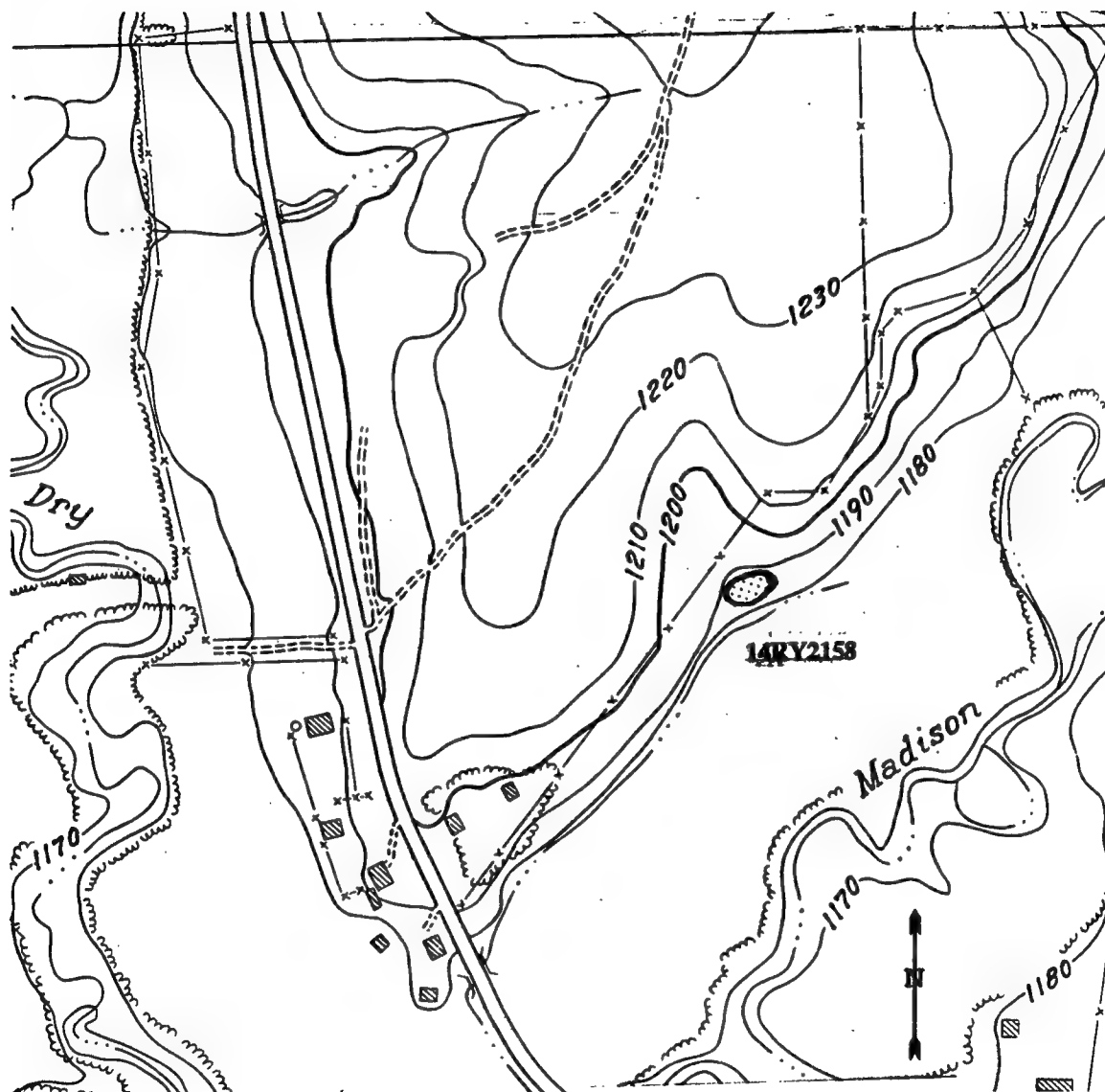


Figure 85: Map of Site 14RY2158 (Scale: 1 inch = 400 feet)



**Site Name:**

**Field No:** MAD31

**Cultural Affiliation:** EuroAmerican

**Topographic Setting:** Terrace

**Parent Material:** Alluvium

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 3 acres

**Surface Visibility:** 10%

**Slope:** 1-3%

**Ground Cover Vegetation:** Overgrown farm, grass & woods

**Survey Date:** 13 Oct 1993

**Land Use:** Public use

**Elevation:** 359 m (1178 ft) amsl

**Site Description and Survey Results:**

This farmstead site is on a terrace on the east bank of Madison Creek. It has six foundations (some of limestone, some with concrete), a limestone well, and several piles of rubble.

Numbered features on the site map are defined as follows:

- 1 - concrete foundation
- 2 - concrete foundation
- 3 - concrete and limestone rubble
- 4 - concrete pad with unmortared stone wall to the east
- 5 - poured concrete pad with small concrete patch on W edge
- 6 - pile of rubble
- 7 - depression with limestone blocks around it
- 8 - limestone well
- 9 - overgrown area (possibly house) with fragment of limestone foundation on S edge
- 10 - pile of rubble

**Cultural Material Collected:**

14RY2159-0-1 Ceramic: Stoneware chick waterer half, gray w/blue stripe 26 cm x 19 cm

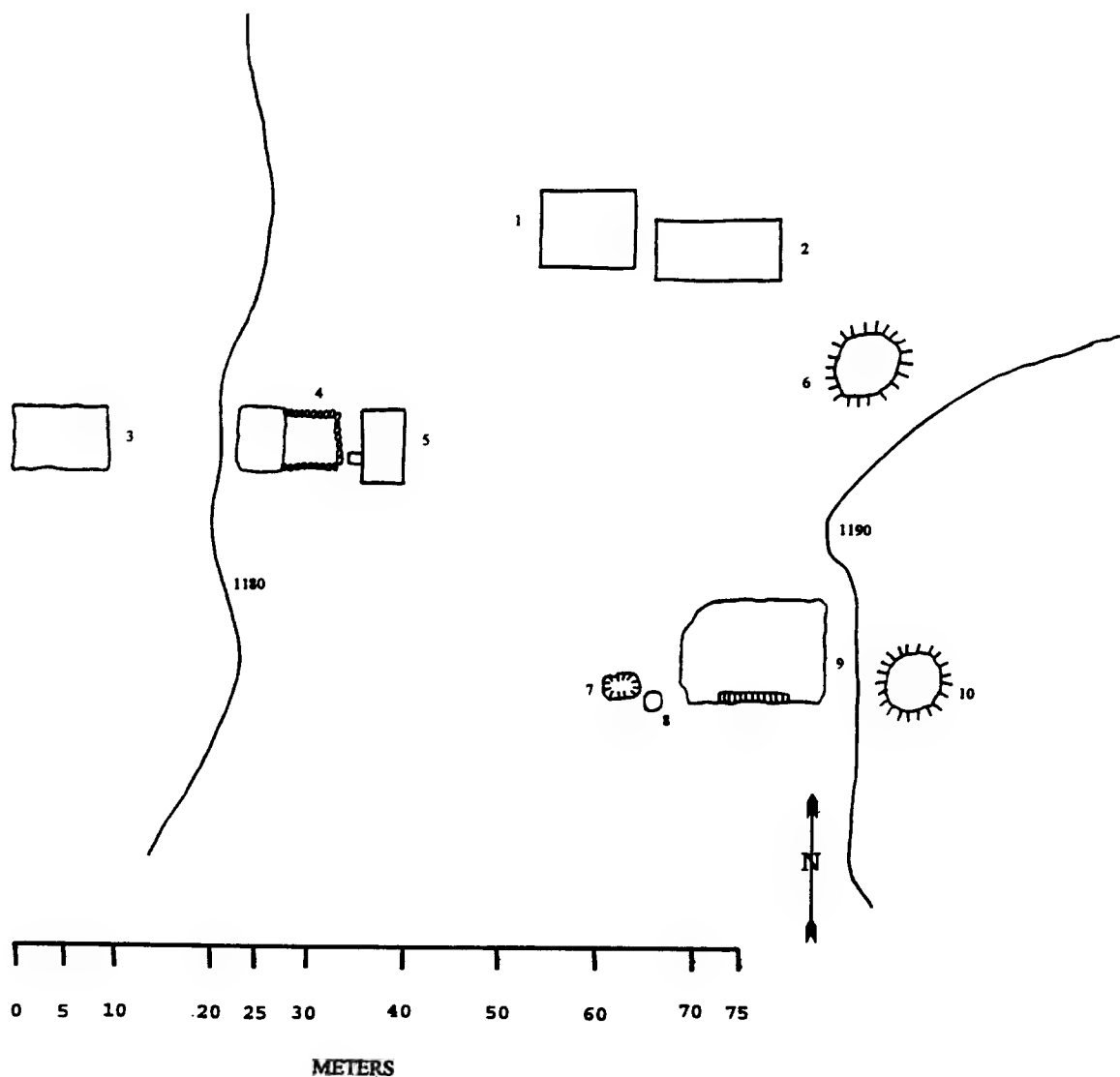
14RY2159-0-2 Glass: whole bottle, 2-piece mold, clear 9.5 cm x 3.9 cm embossed on base "120-on-a-diamond 3.../7"

**Observations, Interpretations and Recommendations:**

The mixture of construction styles from unmortared limestone and mortared limestone to poured concrete foundations implies occupation of the site from the last decades of the 19th century through to the mid-20th century. According to the embossed makers mark, the bottle base recovered was manufactured by the Owens Illinois Glass Co. at their plant in Gas City, Indiana in 1933 using mold #7 (Toulouse 1971:395, 403).

George Avery, one of Riley county's first citizens, received the patent for this homestead land in 1871. In 1913, Edward G. Hanna obtained the deed, and it remained in the Hanna family until expropriated by the government.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).



Numbered features on the map of site 14RY2159 are defined as follows:

- 1 - concrete foundation
- 2 - concrete foundation
- 3 - concrete and limestone rubble
- 4 - concrete pad with unmortared stone wall to the east
- 5 - poured concrete pad with small concrete patch on W edge
- 6 - pile of rubble
- 7 - depression with limestone blocks around it
- 8 - limestone well
- 9 - overgrown area (possibly house) with fragment of limestone foundation on S edge
- 10 - pile of rubble

Figure 86: Map of Site 14RY2159 (Scale: 1 inch = 400 feet)

## 14GE1164

**Site Name:**  
**Field No:** MAD34  
**Cultural Affiliation:** Prehistoric  
**Topographic Setting:** Terrace  
**Parent Material:** Alluvium  
**Drainage:** Republican River  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** Undetermined  
**Surface Visibility:** 20%  
**Slope:** 0-2%  
**Ground Cover Vegetation:** Tallgrass prairie  
**Survey Date:** 13 Oct 1993  
**Land Use:** Public use  
**Elevation:** 351 m (1152 ft) amsl

### Site Description and Survey Results:

This small lithic scatter came from shovel tests in a lowland clearing on a low, formerly cultivated, terrace in the Madison Creek floodplain. The area was silt-covered and muddy, and the ground was still saturated from the 1993 flooding. No artifacts were found on the surface.

Site 14GE40 was reported to be about 1/4 mile south on the same bank; surveyors could not find it.

### Cultural Material Collected:

14GE1164-0-1 Tertiary flakes (3); Heat-treated Permian chert  
14GE1164-0-2 Shatter (4); Heat-treated Permian chert

### Observations, Interpretations and Recommendations:

This site appears to have a relatively dense collection of material, in that these shovel tests were the only ones, among thousands, that exposed cultural material during the project. As the ground was saturated, surveyors did not attempt a test excavation.

The survey results are inconclusive here because of the 1993 field conditions, but the potential density of material below ground, and the position of the site on a terrace remnant along Madison Creek, suggest that this site is an occupation site with potentially undisturbed deposits. The location of the site on a terrace along a tributary of the Republican River is pertinent to the settlement-subsistence model developed by Schmitt (1988) for the Milford Lake area (see description and evaluation of Schmitt's model above, Chapter 2, Research Goals, Predictive Model, p. 7). If the occupation can be dated, it will help integrate regional culture history with specific land use patterns, thereby enhancing the predictability of the model.

It is therefore recommended that further National Register testing (i.e. archaeological survey and subsurface testing) be done to determine whether any undisturbed cultural deposits remain.

Soil profile: 14GE1164

----- 0 cm  
MUIR SILTY CLAY LOAM  
----- 60

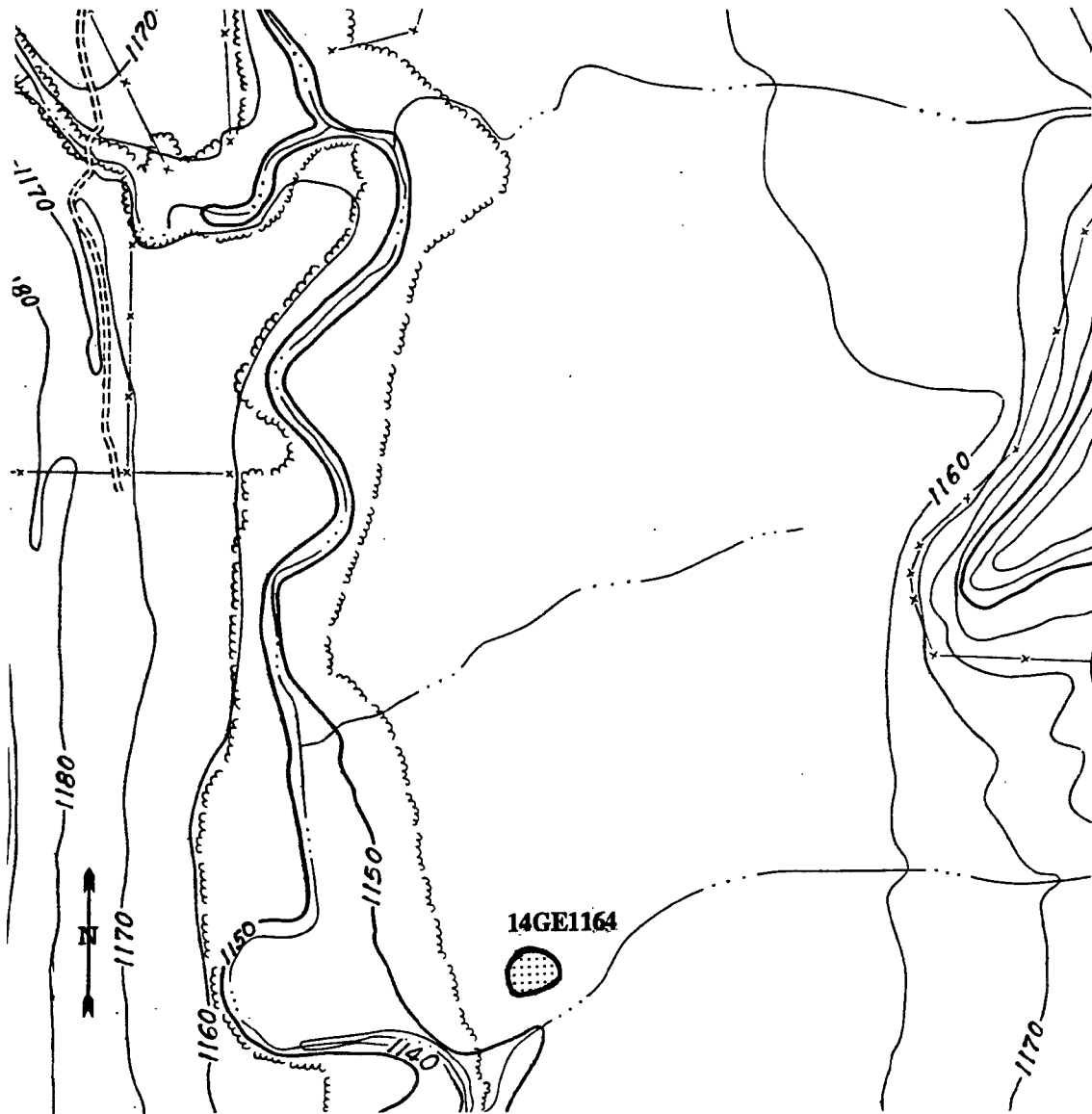


Figure 87: Map of Site 14GE1164 (Scale: 1 inch = 400 feet)

**Site Name:****Field No:** MAD35**Cultural Affiliation:** EuroAmerican**Topographic Setting:** Flint Hills Upland**Parent Material:** Permian Limestone**Drainage:** Republican River**Recording Agency:** Archaeology Lab, USD**Site Size:** 3.5 acres**Surface Visibility:** 40%**Slope:** 0-8%**Ground Cover Vegetation:** Flood scoured pasture & woods**Survey Date:** 13 Oct 1993**Land Use:** Public use**Elevation:** 355 m (1165 ft) amsl**Site Description and Survey Results:**

This farmstead site is on a relatively high, flat terrace along the edge of a tributary of Madison Creek. It consists of four foundations (two of unmortared limestone and one of poured concrete) and piles of rubble. The area had been recently flooded.

Numbered features on the site map are defined as follows:

- 1 - very eroded concrete pad with E-W channel
- 2 - limestone rubble wall foundation
- 3 - foundation
- 4 - poured concrete foundation
- 5 - limestone well

**Cultural Material Collected:**

14GE1174-0-1 Ceramic: Stoneware plate rim-to-base, aqua

14GE1174-0-2 Ceramic: Stoneware base, white

14GE1174-0-3 Glass: Perfume bottle, clear w/gold letters on front

"L'Origan/Perfum/de/Toilerre/Coty/Cont. 1.25 fl oz"; embos."Coty/18" on base

14GE1174-0-4 Glass: Pill bottle using cork or pop on lid embossed "W-in-circle/90" on base

14GE1174-0-5 Glass: Bowl/vase base &amp; body fragment, aqua embossed "L" in circle on base

14GE1174-0-6 Glass: Bowl base/body, forest green, Sandwich Anchor Hocking

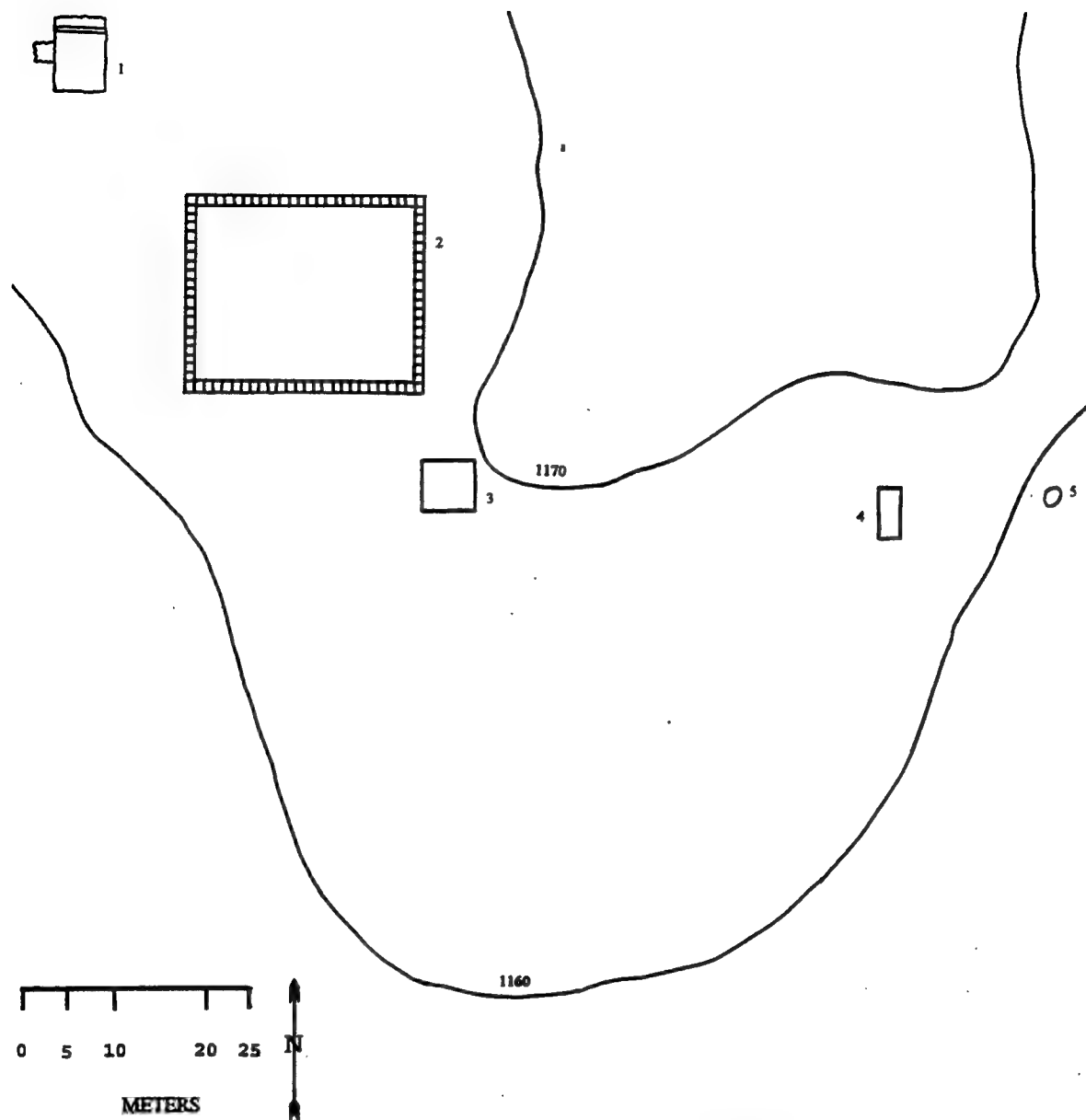
14GE1174-0-7 Glass: rim or base fragment, clear opalescent

14GE1174-0-8 Metal: Square nail

**Observations, Interpretations and Recommendations:**

The presence of drystone construction suggests a relatively early date - some time after B.E. Fullington acquired this property in 1862 (Table A17). The ceramics and cut nail are typical of late 19th century to early 20th century sites, whereas the intact glass bottles are machine-made and therefore 20th century. The pill bottle (14GE1174-0-4) was manufactured by the T.C. Wheaton Company, who adopted the proprietary symbol embossed on it in 1946.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).



Numbered features on the map of site 14GE1174 are defined as follows:

- 1 - very eroded concrete pad with E-W channel
- 2 - limestone rubble wall foundation
- 3 - foundation
- 4 - poured concrete foundation
- 5 - limestone well

Figure 88: Map of Site 14GE1174 (Scale: 1 inch = 400 feet)



**Site Name:**

**Field No:** MAD36

**Cultural Affiliation:** EuroAmerican

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 2.5 acres

**Surface Visibility:** 20%

**Slope:** 1-4%

**Ground Cover Vegetation:** Tallgrass prairie

**Survey Date:** 13 Oct 1993

**Land Use:** Public use

**Elevation:** 365 m (1198 ft) amsl

**Site Description and Survey Results:**

This farmstead site is located on the east side of a peninsula at the top of a draw in the uplands overlooking the Madison Creek valley. It consists of seven foundations (some limestone and the rest poured concrete) and a windmill base.

Numbered features on the site map are defined as follows:

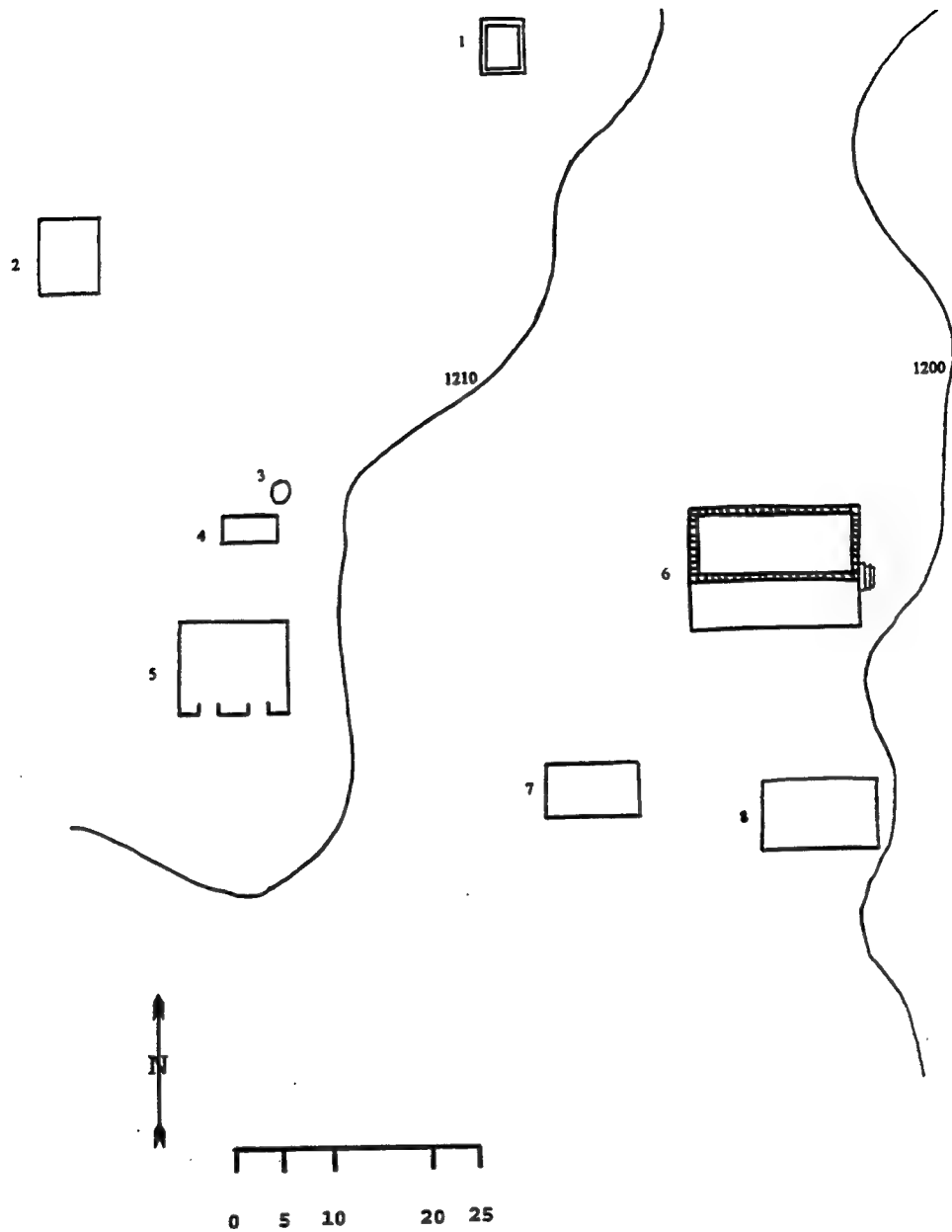
- 1 - foundation
- 2 - concrete foundation
- 3 - windmill base
- 4 - concrete foundation
- 5 - concrete foundation walls
- 6 - house foundation with limestone and concrete walls
- 7 - concrete foundation
- 8 - concrete foundation

No cultural material was collected.

**Observations, Interpretations and Recommendations:**

The presence of limestone foundations suggests an early date for some structures - B.E. Fullington received the land patent in 1862 (Table A18). The cement foundations indicate that most of the farmstead was constructed later, probably well into the 20th century.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).



- METERS**
- Numbered features on the map of site 14GE1175 are defined as follows:
- 1 - foundation
  - 2 - concrete foundation
  - 3 - windmill base
  - 4 - concrete foundation
  - 5 - concrete foundation walls
  - 6 - house foundation with limestone and concrete walls
  - 7 - concrete foundation
  - 8 - concrete foundation

Figure 89: Map of Site 14GE1175 (Scale: 1 inch = 400 feet)

## 14RY2161

**Site Name:**

**Field No:** MAD37

**Cultural Affiliation:** EuroAmerican

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess/Alluvium

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 4.5 acres

**Surface Visibility:** 10%

**Slope:** 0-8%

**Ground Cover Vegetation:** Woods, pasture

**Survey Date:** 14 Oct 1993

**Land Use:** Public use

**Elevation:** 368 m (1207 ft) amsl

### Site Description and Survey Results:

This farmstead site is on a terrace on the west side of Madison Creek at the base of the hillside. It consists of five foundations (some limestone, some cement), a limestone well, buried gas meter housing, concrete fence posts, and piles of bulldozed rubble. Across a ford on the east bank are piles of rubble, a cement silo base, and a cement slab inscribed with "RAYMOND SHARP 7 YR 1935".

Numbered features on the site map are defined as follows:

- 1 - old fence post with wire
- 2 - limestone lined depression
- 3 - limestone well
- 4 - concrete rubble wall
- 5 - natural gas meter in ground
- 6 - concrete rubble
- 7 - four concrete fence posts, running N-S
- 8 - pipe mount for gas meter
- 9 - concrete wall
- 10 - concrete piers with bolts
- 11 - concrete floor slab
- 12 - cement pad with inscription
- 13 - concrete silo base
- 14 - concrete rubble pile
- 15 - rubble pile

### Cultural Material Collected:

- 14RY2161-0-1 Ceramic: Stoneware, base fragment, lt. blue (1)  
14RY2161-0-2 Ceramic: Stoneware, crock rim fragment, gray (1)  
14RY2161-0-3 Glass: Flat, window fragment, clear (1)

### **Observations, Interpretations and Recommendations:**

The limestone foundations and limestone are consistent with construction in the last quarter of the 19th century. The various concrete foundations, walls, pads, and silo base show additions and improvements into the mid-twentieth century as does the gas meter in the buried housing. The colored stoneware fragments are indicative of a style which came into fashion during the Depression era.

A. Younken acquired this property and transferred it to B.E. Fullington in 1861; he in turn deeded it to C. M. Gifford in 1885. H. L. Shirer of Topeka acquired it in 1928. During the 1930s and 1940s the Sharp family rented the property. A project researcher interviewed Raymond Sharp (author of the inscription in the cement) and obtained additional information about the site. The house had nine rooms. West of the house was a garden with lilacs. North of the house was an orchard, a woodshed, and a big cobshed. The outhouse was NW of the house. The barn, on the west side of the creek, was apparently so large that six wagons of hay could stand in it at once on the ground floor. Six teams of horses were housed on one side of the barn, while on the other side there were four pens for bulls and a stall for a pure bred stallion. West of the creek, the Sharps kept horses, pigs and farrowing pens for sows. The barn east of the creek was for fattening cattle and some hogs. Also on the east were a corn crib, silo and a big barn with open sides and mangers all around it for storing alfalfa hay. The ford across the creek had huge stepping stones. Raymond Sharp also reported that he went to school in the small Hillside Chapel about 3/4 mile east of this site.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).

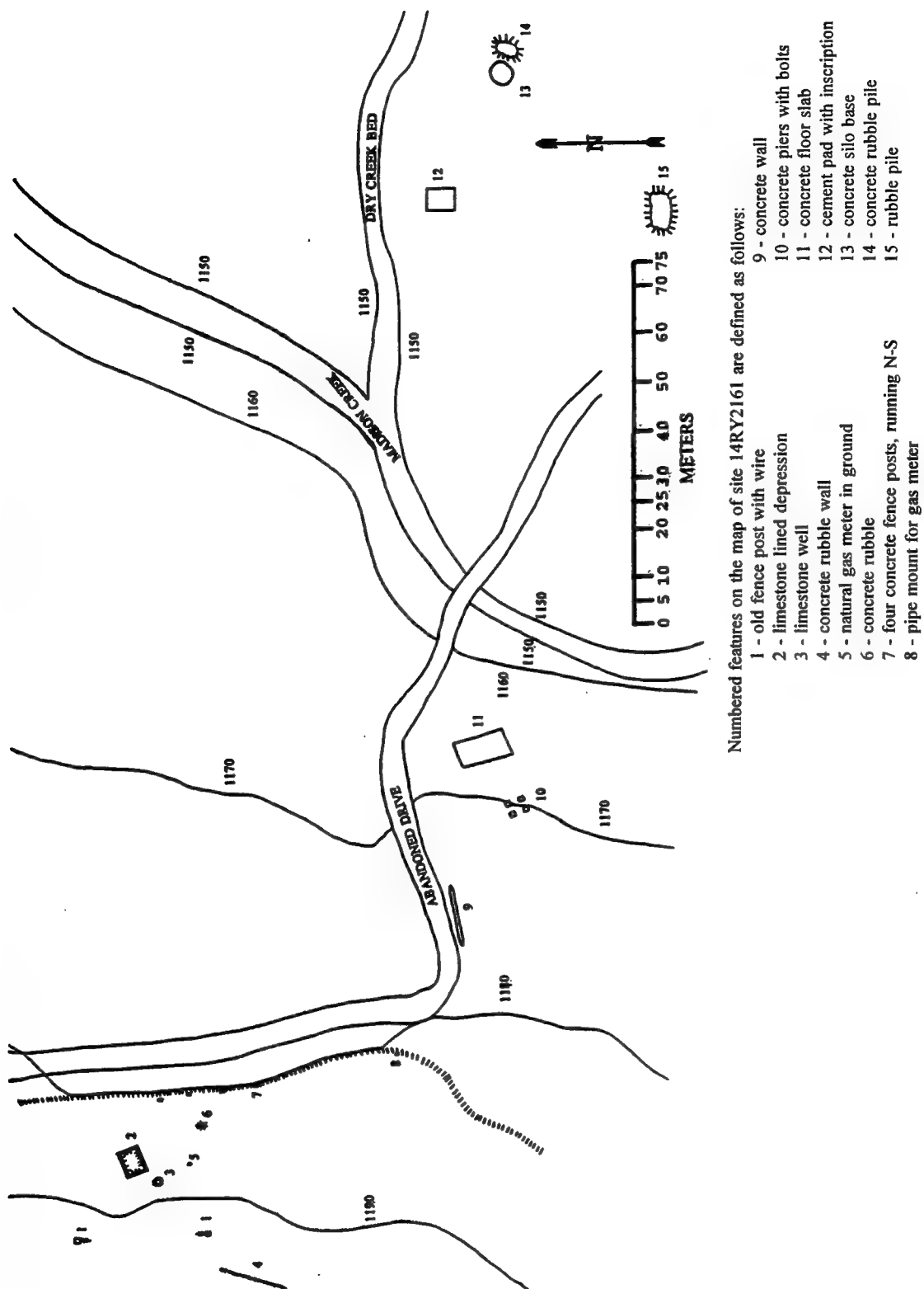


Figure 90: Map of Site 14RY2161 (Scale: 1 inch = 400 feet)

**Site Name:**  
**Field No:** MAD38  
**Cultural Affiliation:** Archaic  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Permian Limestone  
**Drainage:** Republican River  
**Recording Agency:** O'Brien 1976  
**Site Size:** Undetermined  
**Surface Visibility:** 20%  
**Slope:** 0-8%  
**Ground Cover Vegetation:** Tallgrass prairie  
**Survey Date:** 17 Oct 1993  
**Land Use:** Public use  
**Elevation:** 351 m (1156 ft) amsl

**Site Description and Survey Results:**

This previously recorded site is on former agricultural land in uplands northeast of the US 77 bridge across Madison Creek. Surveyors observed two chert flakes but did not collect them. O'Brien (1976) classified the site as Archaic ("maybe Early") based on projectile point typology. Site 14GE28, to the north, is now under water. Surveyors examined exposed ground and conducted shovel tests. The tests failed to uncover any additional cultural material or other evidence of occupation.

No cultural material was collected.

**Interpretation, Evaluation and Recommendations:**

Surveyors verified the continued existence of this site; it has not been severely impacted by the flooding.

The lack of material, absence of visible subsurface deposits, and general loss of site integrity due to agriculture suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

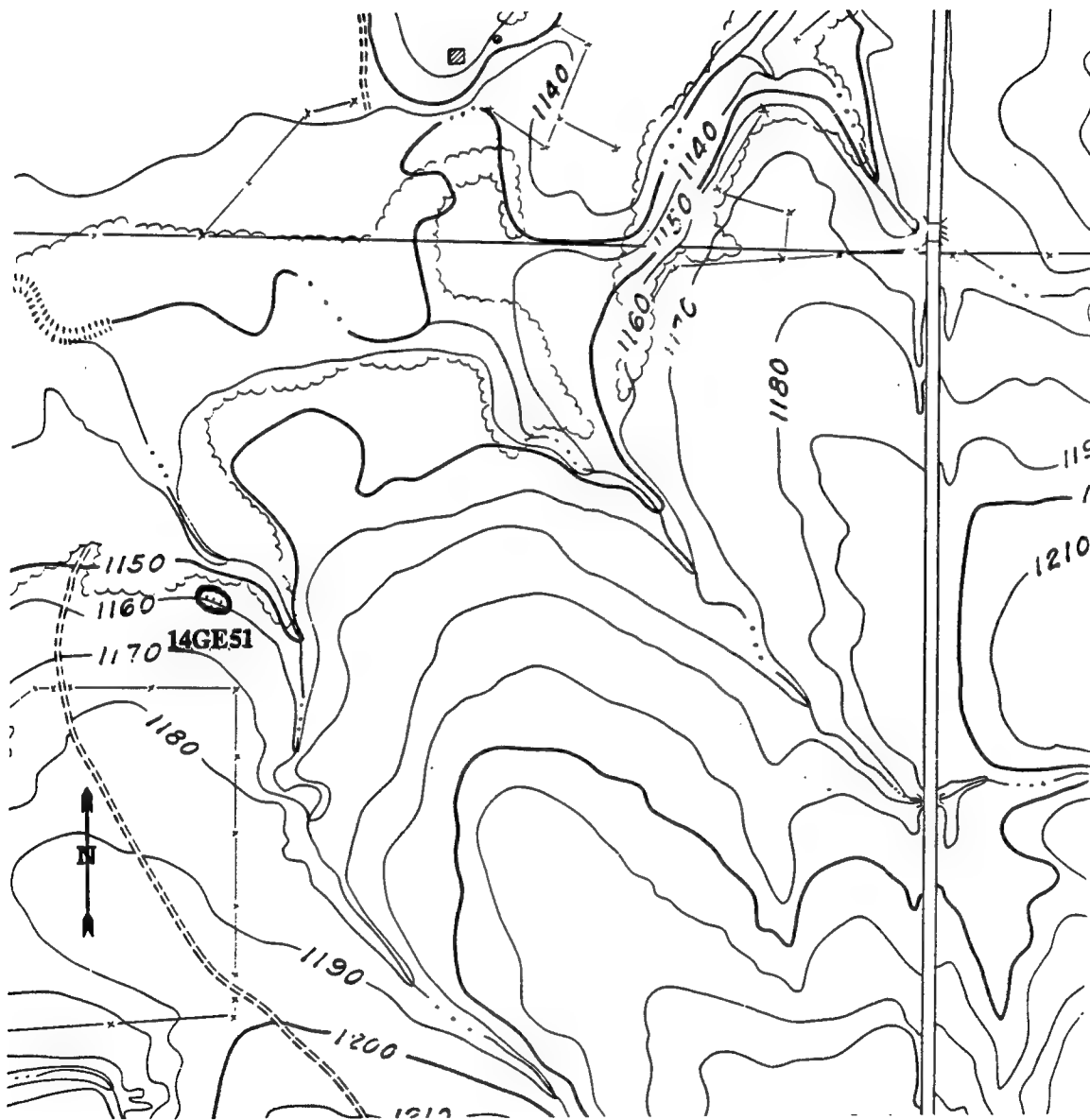


Figure 91: Map of Site 14GE51 (Scale: 1 inch = 400 feet)

**Site Name:**  
**Field No:** MAD39  
**Cultural Affiliation:** Prehistoric  
**Topographic Setting:** Terrace  
**Parent Material:** Alluvium  
**Drainage:** Republican River  
**Recording Agency:** Archaeology Lab, USD  
**Site Size:** 100 x 50 m  
**Surface Visibility:** 20%  
**Slope:** 0-2%  
**Ground Cover Vegetation:** Tallgrass prairie  
**Survey Date:** 17 Oct 1993  
**Land Use:** Public use  
**Elevation:** 351 m (1156 ft) amsl

#### **Site Description and Survey Results:**

This site is an extensive scatter of tools and lithic debris across a high terrace in formerly cultivated land on Madison Creek inlet northeast of the US 77 bridge. Although there is no road along the shoreline, off-road military vehicles (trucks and tanks) have disturbed the surface. Surveyors examined eroded shoreline banks, vehicle tracks and conducted numerous shovel tests. The shovel tests did not recover additional cultural material or other evidence of occupation.

Site 14GE28, to the north, is now under water, and site 14GE51 is to the west.

#### **Cultural Material Collected:**

- 14GE1169-0-1 Unifacial projectile point (1); Small triangular point; Invasive retouch on dorsal surface - may be preform; Permian chert
- 14GE1169-0-2 Biface fragment (1); Probably distal end; Invasive retouch, some use wear evident; Wreford chert
- 14GE1169-0-3 Biface fragment (1); Probably distal end, very tip missing; Invasive retouch, some use wear evident - possible projectile point; Permian chert
- 14GE1169-0-4 Spokeshave/scrapper (1); Produced on large tertiary flake; Steep retouch on left lateral margin, notch on distal end - multi-purpose tool; Permian chert
- 14GE1169-0-5 Retouched flake (1); Limited marginal retouch on upper and lower left lateral edge; Wreford chert
- 14GE1169-0-6 Retouched flake (1); Marginal retouch; Heat treated Permian chert
- 14GE1169-0-7 Retouched flake (1); Steep marginal retouch on distal end of a very small flake; Heat-treated Permian chert
- 14GE1169-0-8 Retouched flake/graver (1); Produced on long, narrow primary flake; Retouched platform to produce graver tip, use wear evident on right lateral margin; Permian chert
- 14GE1169-0-9 Retouched flake (1); Bi-directional marginal retouch on all edges; Heat-treated Permian chert
- 14GE1169-0-10 Spokeshave/scrapper (1); Produced on broken tertiary flake; Steep retouch on proximal edge, notch on lower right lateral edge; Permian chert
- 14GE1169-0-11 Retouched flake fragment (1); Limited marginal retouch on upper right lateral edge; Permian chert



14GE1169-0-12 Utilized flake fragment (1); Heavy use wear evident; Permian chert  
 14GE1169-0-13 Utilized flake fragment (1); One edge shows notch, but no use wear; Permian chert  
 14GE1169-0-14 Utilized flake fragments (4); Permian chert  
 14GE1169-0-15 Retouched shatter (1); Limited marginal retouch; Permian chert  
 14GE1169-0-16 Bifacial thinning flakes (2); Permian chert  
 14GE1169-0-17 Cores (2); Permian chert  
 14GE1169-0-18 Primary flakes (2); Permian chert  
 14GE1169-0-19 Secondary flakes (4); Permian chert  
 14GE1169-0-20 Tertiary flakes (39); Permian chert  
 14GE1169-0-21 Shatter (33); Permian chert  
 14GE1169-0-22 Core (1); Heated treated Permian chert  
 14GE1169-0-23 Secondary flakes (2); Heated treated Permian chert  
 14GE1169-0-24 Tertiary flakes (15); Heated treated Permian chert  
 14GE1169-0-25 Shatter (10); Heated treated Permian chert  
 14GE1169-0-26 Natural shatter (15); Various Permian cherts

**Description of 14GE1169-0-1: Unifacial Point (Figure 92):**

This small, un-notched, triangular point is made on a secondary or tertiary flake. The ventral face of the flake is unmodified. The dorsal face has been trimmed slightly to form the tip and straighten the basal edge of the point.

Dimensions:    17 mm, length.  
                   11 mm, width.  
                   2 mm, thickness.

**Observations, Interpretations and Recommendations:**

The tools and lithic debris scattered over this terrace cover all stages of lithic processing (cores to finished tools). Although surveyors found no introduced rock (ie. fire-cracked rock), the location of this site, on a well-defined terrace lobe near the confluence of Madison Creek and a small tributary, with access to a broad floodplain, suggests that it was relatively densely occupied - a campsite associated with the procurement of food resources along Madison Creek.

The relatively large amount of material and the fact that this was probably a habitation site suggest that this site is of relevance to local and regional archaeology. The location of the site on a terrace along a tributary of the Republican River is pertinent to the settlement-subsistence model developed by Schmitt (1988) for the Milford Lake area (see description and evaluation of Schmitt's model above, Chapter 2, Research Goals, Predictive Model, p. 7). If the occupation can be dated, it will help integrate regional culture history with specific land use patterns, thereby enhancing the predictability of the model.

It is therefore recommended that further National Register testing (i.e. archaeological survey and subsurface testing) is done - in spite of the absence of visible subsurface deposits and the general loss of site integrity due to agriculture. Such evaluation will also determine whether measures need to be taken to protect the site - damaged by the flooding and by vehicular traffic.



Figure 92: Unifacial projectile point.

Soil profile: 14GE1169

----- 0 cm  
MUIR SILTY CLAY LOAM  
dark

----- 23  
reddish, grading to  
increasing yellowish tints  
----- 60

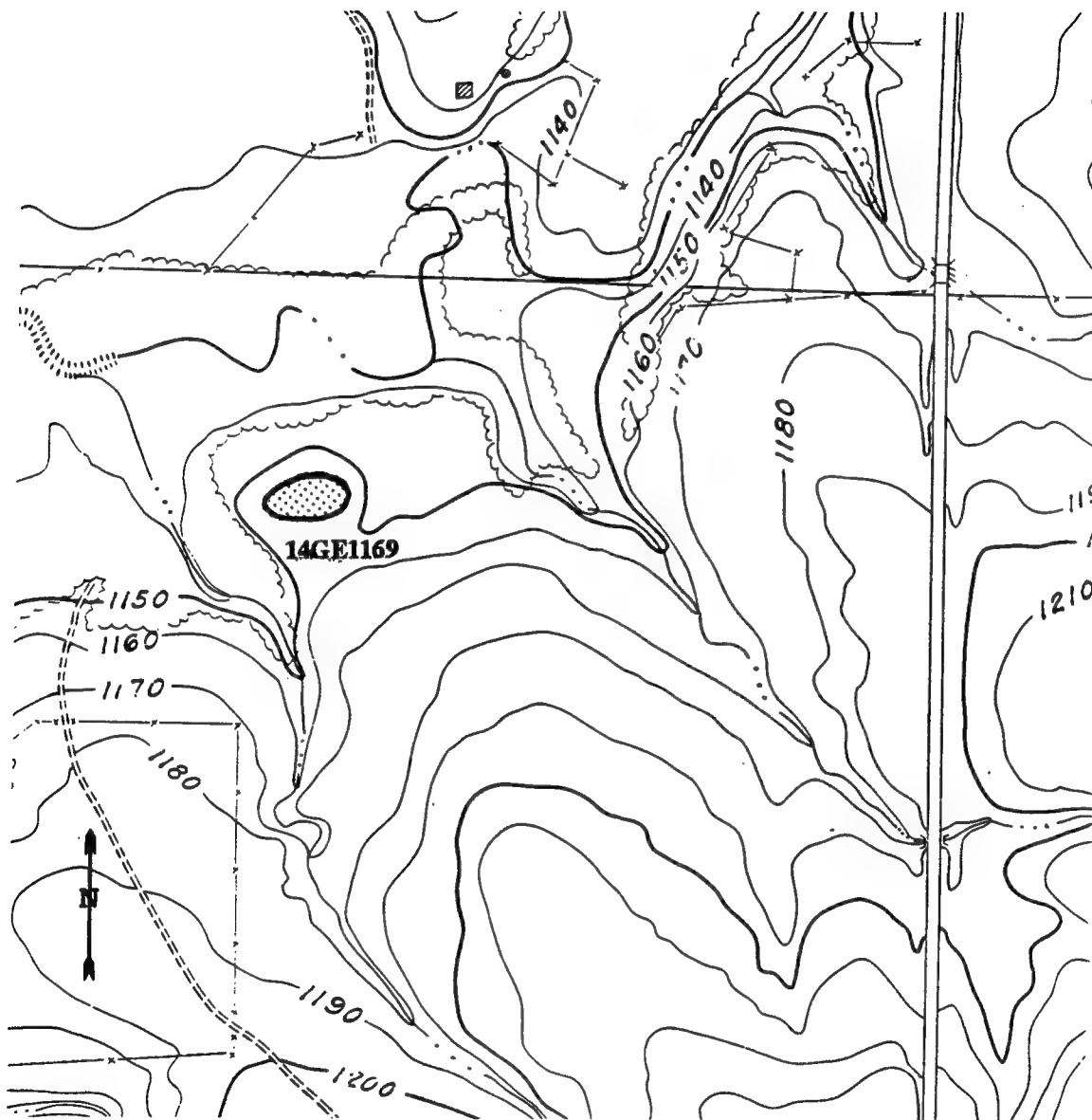


Figure 93: Map of Site 14GE1169 (Scale: 1 inch = 400 feet)

## 14GE1170

**Site Name:**

**Field No:** MAD40

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Permian Limestone

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 10 x 5 m

**Surface Visibility:** 20%

**Slope:** 0-8%

**Ground Cover Vegetation:** Tallgrass prairie, flood-scoured

**Survey Date:** 17 Oct 1993

**Land Use:** Public use

**Elevation:** 356 m (1168 ft) amsl

**Site Description and Survey Results:**

This small lithic scatter is on an upland bluff along a tributary in Madison Creek inlet. Sites 14GE51 and 14GE28 are about 1/4 mile to the west. Shovel tests failed to reveal any additional cultural material or other evidence of occupation.

**Cultural Material Collected:**

14GE1170-0-1 Tertiary flake (1); Permian chert

14GE1170-0-2 Shatter (2); Permian chert

14GE1170-0-3 Shatter (1); Chalcedony

**Observations, Interpretations and Recommendations:**

This small scatter is likely a brief occupation associated with the resources of Madison Creek and its northeastern tributary.

The survey results suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14GE1170

----- 0 cm  
SOGN ROCKY CLAY LOAM  
reddish B  
(substantial erosion)  
----- 60

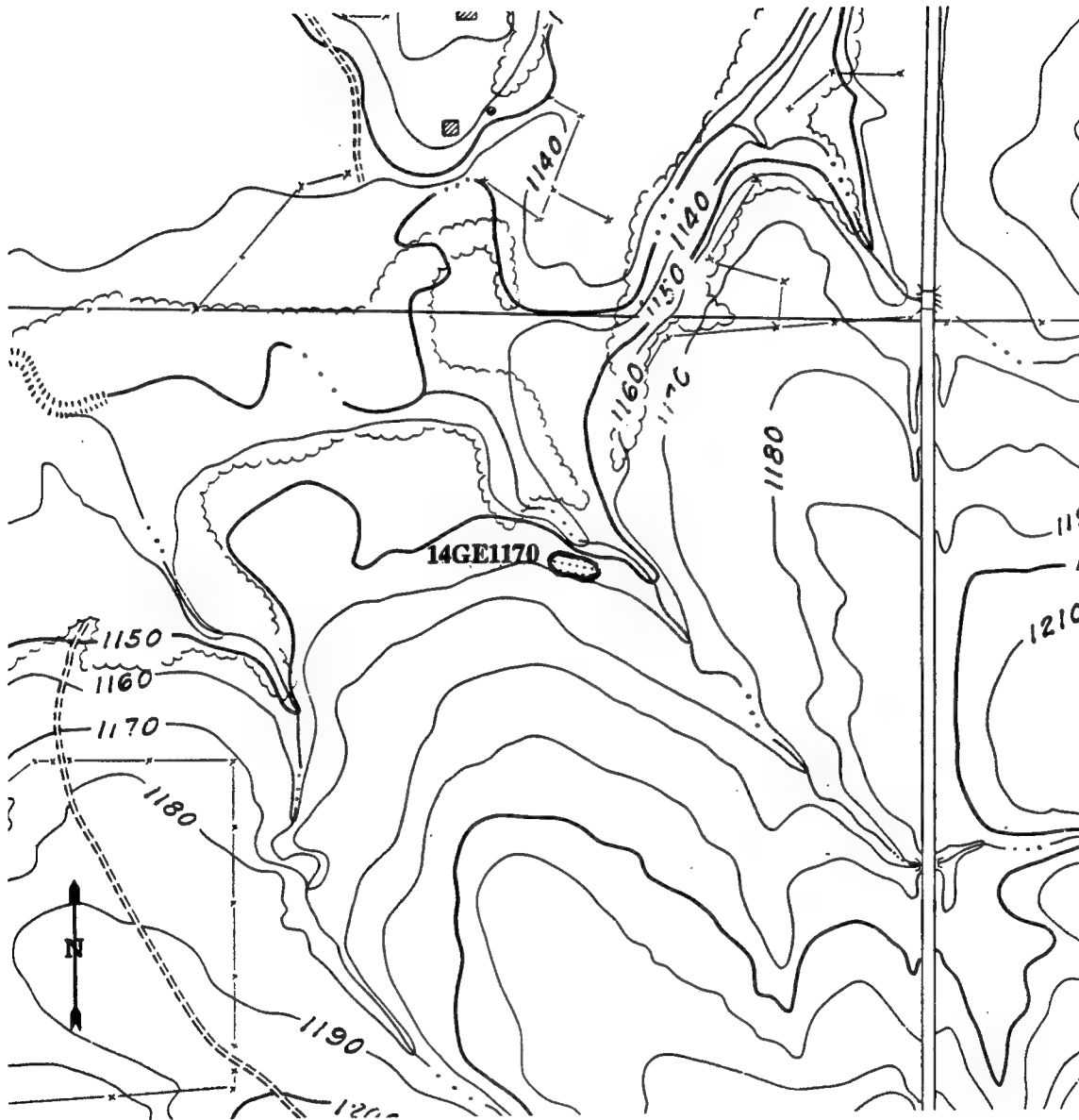


Figure 94: Map of Site 14GE1170 (Scale: 1 inch = 400 feet)

## 14GE1171

**Site Name:**

**Field No:** MAD41

**Cultural Affiliation:** Prehistoric

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Permian Limestone

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 10 x 5 m

**Surface Visibility:** 20%

**Slope:** 0-8%

**Ground Cover Vegetation:** Tallgrass prairie

**Survey Date:** 17 Oct 1993

**Land Use:** Public use

**Elevation:** 355 m (1165 ft) amsl

**Site Description and Survey Results:**

This small lithic scatter is on a mud flat along the shoreline of Madison Creek inlet near the mouth of a small tributary; the material eroded from the bank above. Sites 14GE51 and 14GE28 are about 1/4 mile to the west. Shovel tests above the bank failed to reveal any additional cultural material or other evidence of occupation.

**Cultural Material Collected:**

14GE1171-0-1 Biface midsection (1); Invasive retouch; Some use-wear; possible preform;  
Permian chert

14GE1171-0-2 Flake fragment (1); Permian chert

**Observations, Interpretations and Recommendations:**

This small scatter may represent the remnants of a site eroded by flood waters or a brief occupation. It is associated with the resources of Madison Creek and its northeast tributary.

The survey results suggest that this site is not of sufficient significance to require further National Register testing (i.e. archaeological survey and subsurface testing).

Soil profile: 14GE1171

----- 0 cm  
SOGN ROCKY CLAY LOAM  
----- 60  
limestone

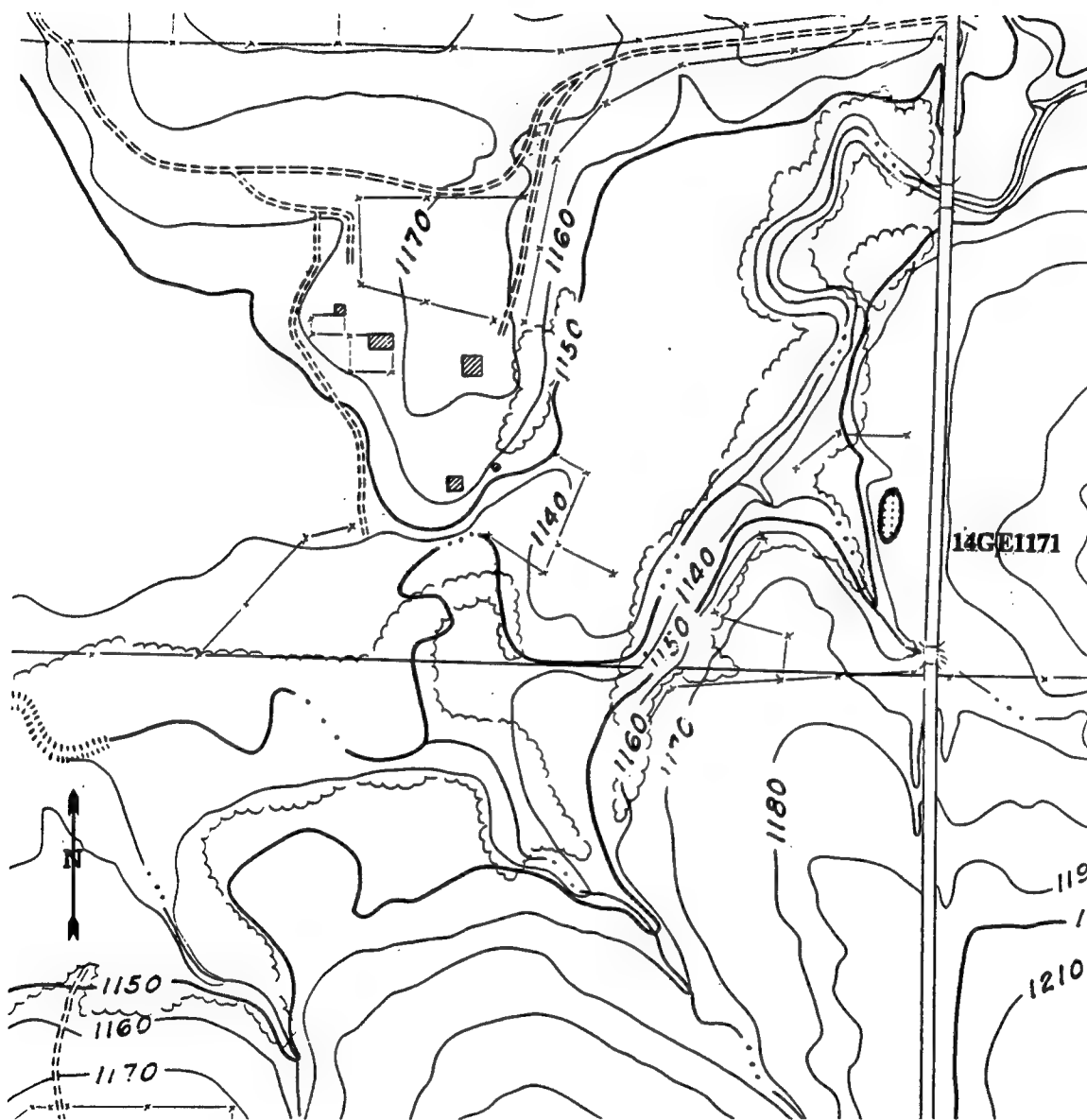


Figure 95: Map of Site 14GE1171 (Scale: 1 inch = 400 feet)

**Site Name:**  
**Field No:** MAD42  
**Cultural Affiliation:** Prehistoric  
**Topographic Setting:** Flint Hills Upland  
**Parent Material:** Loess  
**Drainage:** Republican River  
**Recording Agency:** Muller & Schock 1964  
**Site Size:** 300 x 300 m  
**Surface Visibility:** 20%  
**Slope:** 1-4%  
**Ground Cover Vegetation:** Tallgrass prairie  
**Survey Date:** 18 Oct 1993  
**Land Use:** Public use  
**Elevation:** 353 m (1158 ft) amsl

#### **Site Description and Survey Results:**

This large prehistoric campsite extends across a large terrace between two draws north of the causeway bridge across Madison Creek inlet. Muller & Schock (1964) classified it as a habitation site of possible Woodland affiliation. Surveyors observed many flakes and other debitage and collected one tool, a knife.

Modern damage to the site is extensive. The land, a former cultivated field, is extensively terraced. A dirt road runs through the site. On this track was a recently dug pit - possibly to cradle a barbecue. Several flakes lay in the backdirt of this excavation.

Surveyors were able to assess the shallow subsurface along the shoreline, in disturbed areas, and through shovel tests across the site. These failed to recover any additional cultural material or other evidence of occupation.

#### **Cultural Material Collected:**

14GE29-0-1 Biface fragment (1); Proximal portion of a long, thin, bifacial knife; Invasive retouch;  
 Heat-treated Permian chert  
 14GE29-0-2 Tertiary Flake (1); Permian chert

#### **Description of 14GE29-0-1: Biface Base (Figure 96):**

This specimen represents one end of a narrow biface. On the obverse face, long, pressure flake scars extend in from both lateral edges, overlapping along the midline. The reverse face contains wide, shallow secondary scars, often showing ripple marks. There is tertiary trimming along thicker parts of the edge near the base. The biface was cleanly snapped at the opposite end.

**Dimensions:** 35 mm, width.  
 6 mm, thickness.



### Observations, Interpretations and Recommendations:

This large site is clearly an intensively used occupation site associated with the resources of Madison Creek. Unfortunately, it has been heavily impacted by both agriculture and more recent activity associated either with the military or the public (as a campsite).

This site has been densely occupied, increasing the potential for significant archaeological information. The location of the site on a terrace along a tributary of the Republican River is pertinent to the settlement-subsistence model developed by Schmitt (1988) for the Milford Lake area (see description and evaluation of Schmitt's model above, Chapter 2, Research Goals, Predictive Model, p. 7). If the occupation can be dated, it will help integrate regional culture history with specific land use patterns, thereby enhancing the predictability of the model. The site is also under threat from road damage and other modern disturbance (connected with public and military use). It is therefore recommended that this site be further tested to ascertain its National Register eligibility.

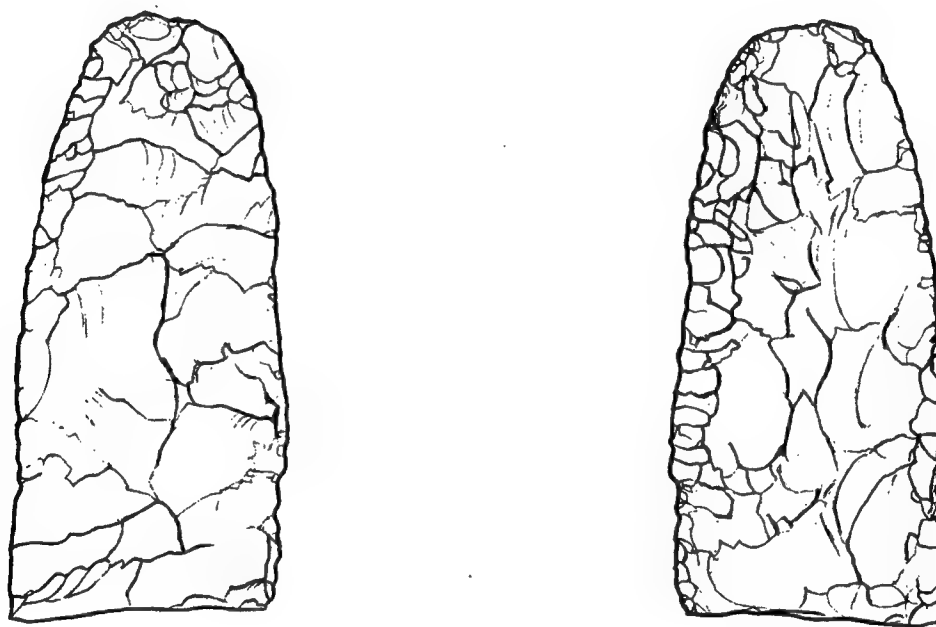


Figure 96: Biface base.

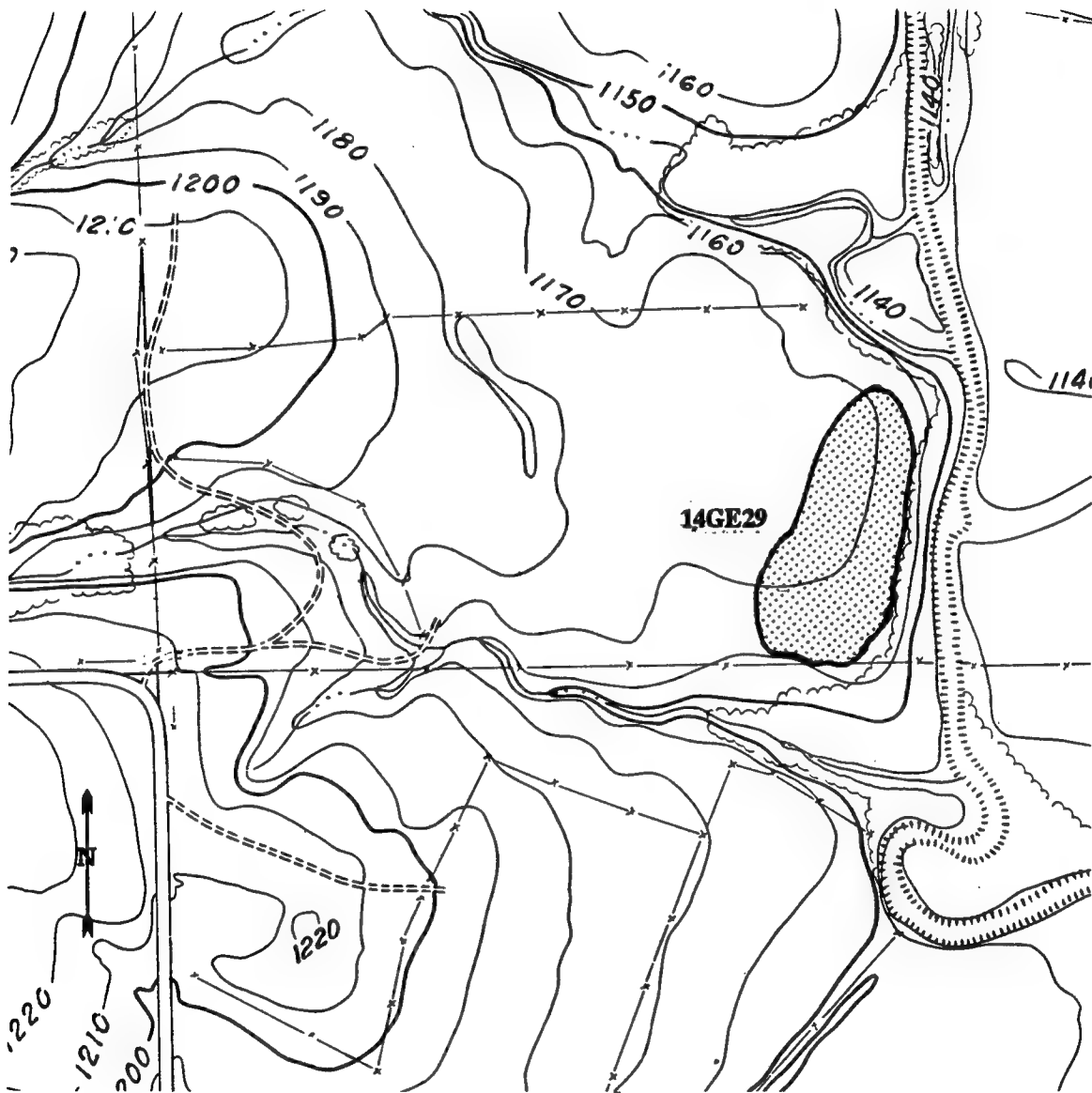


Figure 97: Map of Site 14GE29 (Scale: 1 inch = 400 feet)

**Site Name:**

**Field No:** MAD43

**Cultural Affiliation:** EuroAmerican

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 3.5 acres

**Surface Visibility:** 10-20%

**Slope:** 8-12%

**Ground Cover Vegetation:** Tallgrass prairie

**Survey Date:** 13 April 1994

**Land Use:** Public use

**Elevation:** 360 m (1181 ft) amsl

**Site Description and Survey Results:**

This farmstead site is located on an upland near the border between Clay and Geary counties about a half mile north of Milford Lake.

Numbered features on the site map are defined as follows:

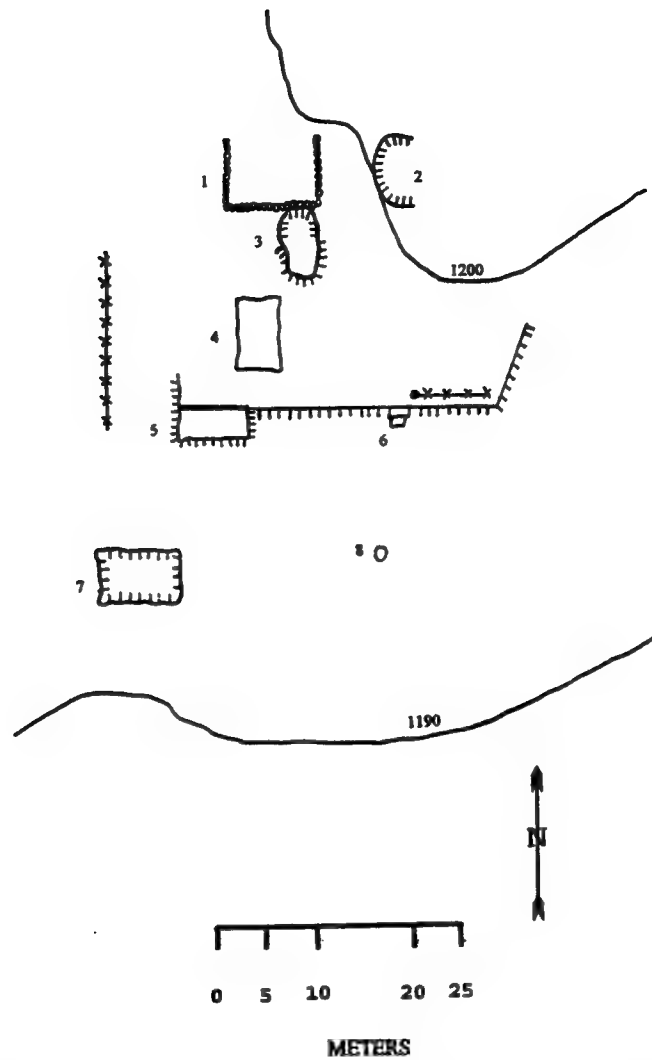
- 1 - fieldstone foundation
- 2 - depression with scattered limestone and concrete
- 3 - rubble pile
- 4 - tiger lily patch
- 5 - retaining wall remnants with stone rubble pile
- 6 - concrete steps, S on mound
- 7 - depression with scattered limestone
- 8 - well

No cultural material was collected.

**Observations, Interpretations and Recommendations:**

The presence of a fieldstone foundation suggests an early date for some of the buildings of this site sometime after Henry A. Myers homesteaded in 1881 (Table A20). The concrete foundations and steps made from Portland cement would have been built after 1890 when Uriah Myers inherited the property. Buildings were shown at this site in 1957 (US Army Corps of Engineers n.d.: Sheet 29).

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).



Numbered features on the map of site 14GE1176 are defined as follows:

- 1 - fieldstone foundation
- 2 - depression with scattered limestone and concrete
- 3 - rubble pile
- 4 - tiger lily patch
- 5 - retaining wall remnants with stone rubble pile
- 6 - concrete steps, S on mound
- 7 - depression with scattered limestone
- 8 - well

Figure 98: Map of Site 14GE1176 (Scale: 1 inch = 400 feet)

**Site Name:**

**Field No:** MAD44

**Cultural Affiliation:** EuroAmerican

**Topographic Setting:** Flint Hills Upland

**Parent Material:** Loess

**Drainage:** Republican River

**Recording Agency:** Archaeology Lab, USD

**Site Size:** 3.5 acres

**Surface Visibility:** 10-20%

**Slope:** 1-4%

**Ground Cover Vegetation:** Tallgrass prairie

**Survey Date:** 13 April 1994

**Land Use:** Public use

**Elevation:** 363 m (1191 ft) amsl

**Site Description and Survey Results:**

This farmstead site is on upland on a long peninsula extending south into Milford Lake near the mouth of Madison Creek.

Numbered features on the site map are defined as follows:

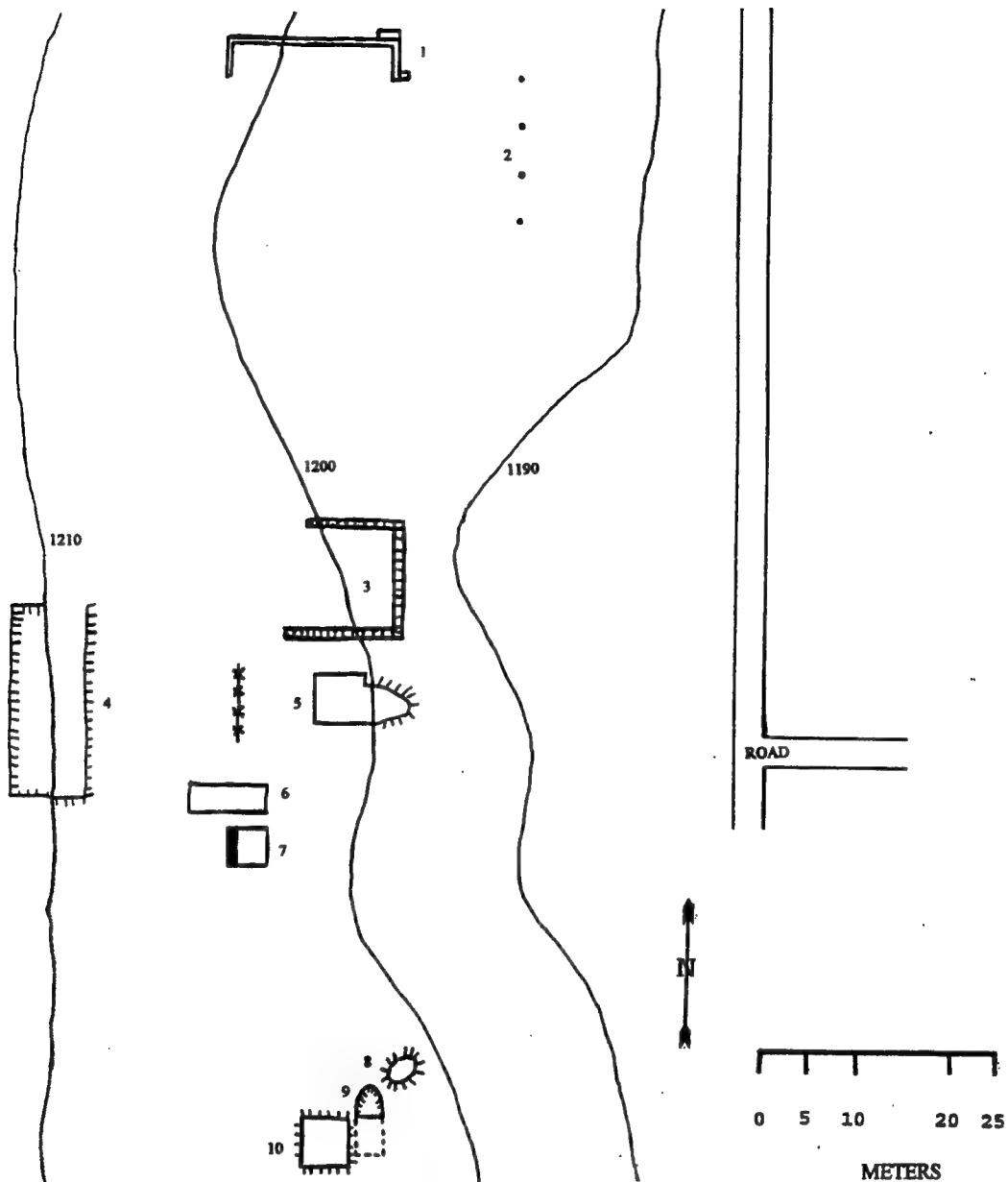
- 1 - concrete footing with attached slabs
- 2 - old wooden fence posts
- 3 - limestone block foundation
- 4 - foundation with bedrock exposure to W
- 5 - cement slab with rubble pile to E
- 6 - poured concrete foundation
- 7 - cement slab with cement retaining wall along W edge
- 8 - concrete rubble pile
- 9 - poured concrete root cellar
- 10 - broken concrete footing

No cultural material was collected.

**Interpretation, Evaluation and Recommendations:**

The extensive use of cement in this farmstead suggests a 20th century date.

The survey and archival research results for this site indicate that it does not meet any of the criteria for National Register eligibility: it is not associated with events which significantly contributed to broad patterns of history or with persons significant in national, regional or local history; it does not embody a significant design or construction technique; and it is not a potential source of important historical information. Furthermore, the site has lost most of its integrity, as it was bulldozed as part of the Milford Lake reservoir development. Therefore, this site does not require further National Register testing (i.e. archaeological survey and subsurface testing).



Numbered features on the map of site 14GE1177 are defined as follows:

- 1 - concrete footing with attached slabs
- 2 - old wooden fence posts
- 3 - limestone block foundation
- 4 - foundation with bedrock exposure to W
- 5 - cement slab with rubble pile to E
- 6 - poured concrete foundation
- 7 - cement slab with cement retaining wall along W edge
- 8 - concrete rubble pile
- 9 - poured concrete root cellar
- 10 - broken concrete footing

Figure 99: Map of Site 14GE1177 (Scale: 1 inch = 400 feet)

## CHAPTER 6: SUMMARY AND CONCLUSIONS

The results of this survey, site condition and recommendations, are summarized in Table 1, below.

Field Number	Site Number	Cultural affiliation	Content	Condition	Expected impacts	Significance and recommendations (ns = not significant, further work not recommended)
SH1	14GE1130	Late Plains Village	Lithic scatter (Washita point, preform)	Flood-scoured, road-damaged	Traffic & erosion	Further NR Testing
SH2	14GE1132	EuroAmerican	Semi-circular foundation, farm debris	Flood-scoured	Traffic & erosion	ns
SH4	14GE1134	EuroAmerican	5 boulders with petroglyphs	Weathered	Weather, graffiti	Further NR Testing
SH6	14GE1131	Prehistoric	Lithic scatter (core, debitage)	Flood-scoured	Lake erosion	ns
SH7	14GE1133	EuroAmerican	Farm dump (ceramic, glass, metal)	Exposed	Erosion	ns
SH8	14GE1173	EuroAmerican	Concrete silo base, foundation	Flood-scoured	Traffic & erosion	ns
SH9	14GE45	Prehistoric	Isolated find (retouched flake)	Severe bank erosion	Bank erosion	ns
SH10	14GE131	Plains Woodland	Lithic scatter (2 bifaces, scraper, debitage)	Severe bank erosion	Bank erosion	ns
SH11	14GE42	Archaic	Isolated find (tertiary flake)	Flood-scoured, severe bank erosion	Lake erosion	ns
SH12	14GE1135	Plains Village	Lithic scatter (Haskell point, scraper, debitage)	Flood-scoured	Erosion	ns
RB1	14CY105	Prehistoric	Large lithic scatter (core, scrapers, unifacial & bifacial tools, spokeshave, debitage)	Plowed, severe erosion	Cultivation	Further NR Testing
RB3	14CY106	EuroAmerican	Farm foundations & debris	Exposed	Re-growth, hunters	Further NR Testing

Table of Sites, Site Condition and Recommendations, cont.

RB5	14CY46	Prehistoric	Lithic scatter (core, debitage)	Plowed	Cultivation	Further NR Testing
RB6	14CY47	Prehistoric	Lithic scatter (graver, spokeshave, debitage)	Plowed	Erosion, cultivation	ns
RB7	14CY107	Prehistoric	Isolated find (unifacial knife)	Plowed	Cultivation	ns
RB8	14CY108	Prehistoric	Lithic scatter (biface tip, retouched flake, debitage)	Plowed	Cultivation	ns
RB9	14CY109	Prehistoric	Lithic scatter (core, scraper, retouched flake, debitage)	Plowed	Cultivation	ns
MC1	14CY25	Plains Woodland/ Archaic	Lithic concentration (core, retouched flake, debitage)	Silted		ns
MC2	14CY42	Plains Woodland/ Archaic	Core,debitage	Silted		ns
MC3	14CY110	Prehistoric	Debitage	Silted, flood- scoured		ns
MC4	14CY111	Prehistoric	Lithic scatter (core, debitage)	Silted, flood- scoured	Erosion	ns
MC5	14CY112	EuroAmerican	Farm foundations (cement & limestone)	Flood-scoured, exposed	Overgrowth	ns
MC6	14CY113	EuroAmerican	Limestone & cement buildings, foundations	Exposed	Overgrowth	Further NR testing
MC7	14CY114	EuroAmerican	Limestone well & wall	Exposed	Overgrowth	ns
MC8	14CY115	EuroAmerican	Lime kiln (glassy)	Flood-damage	Weathering	ns
MC9	14CY116	EuroAmerican	Lime kiln	Flood-damage	Weathering	ns
MC10	14CY57	Prehistoric	Lithic scatter (retouch. flake, debitage)	Flood-scoured, silted	Cultivation, erosion	ns



Table of Sites, Site Condition and Recommendations, cont.

TC1	14RY2150	Prehistoric	Isolated find (tertiary flake)	Tank road	Tank traffic, erosion	ns
TC2	14CY117	Prehistoric	Lithic scatter (retouch. flake, debitage)	Plowed	Cultivation, Army activity	ns
TC3	14RY2152	Prehistoric	Isolated find (Spokeshave/ knife)	Tank road	Tank traffic, erosion	ns
FC1	14GE1136	Prehistoric	Lithic scatter (core, bifaces, scraper, spokeshave, debitage)	Flood-scoured	Cultivation, erosion, flooding	ns
FC2	14GE1137	Prehistoric	Lithic scatter (core, retouch. flakes, debitage)	Flood-scoured	Cultivation, erosion	ns
FC3	14GE1138	Prehistoric	Lithic scatter (bone, scrapers, debitage)	Flood-scoured	Cultivation, erosion	ns
FC4	14GE1139	Prehistoric	Lithic scatter (debitage)	Plowed	Cultivation	ns
FC5	14GE1140	Prehistoric	Lithic scatter (retouch, debitage)	Plowed	Erosion, Army activity	ns
FC6	14GE1141	EuroAmerican	Limestone, cement foundations, walls, well, bridge	Flood- damaged	Tank traffic, erosion	ns
FC7	14GE1142	EuroAmerican	Drystone foundation	Exposed	Tank traffic	ns
FC8	14GE1143	EuroAmerican	Limestone/ mortar foundations, well, cellar	Exposed	Army activity	ns
FC9	14GE1144	Prehistoric	Large lithic scatter (blades, bifaces, core, scrapers, retouch, debitage)	Flood-scoured	Cultivation, severe erosion	Further NR Testing
FC10	14GE1145	Prehistoric	Isolated find (tertiary flake)	Plowed	Cultivation, tanks	ns
FC11	14GE1146	Prehistoric	Isolated find (tertiary flake)	Plowed	Cultivation	ns

Table of Sites, Site Condition and Recommendations, cont.

MAD1	14GE1147	Prehistoric	Lithic scatter (retouch, debitage)	Eroded shoreline	Bank erosion	ns
MAD2	14GE1148	Late Archaic/ Early Woodland	Lange point, biface midsection	Eroded shoreline	Bank erosion	ns
MAD3	14GE1149	EuroAmerican	Brick/concrete trench foundation	Exposed	Erosion	ns
MAD4	14GE1150	Late Plains Village	Pottery body sherd, retouch, debitage	Eroded shoreline	Beach erosion	ns
MAD5	14GE1151	EuroAmerican	Dry limestone & cement foundations, brick chimney	Exposed	Overgrowth	ns
MAD6	14GE1152	EuroAmerican	Limestone cistern, foundations, well, concrete walls	Exposed	Vegetation	ns
MAD7	14GE1153	Late Archaic/ Early Woodland	Side-notched projectile point, debitage	Plowed	Cultivation	ns
MAD8	14GE1166	EuroAmerican	Dump	Exposed	Erosion	ns
MAD9	14GE1167	EuroAmerican	Rubble, foundation fragments, glass, square nail	Exposed	Erosion	ns
MAD10	14GE1154	Prehistoric	Lithic scatter (tertiary flakes)	Eroded bank	Erosion	ns
MAD11	14GE1155	Prehistoric	Isolated find (projectile point tip)	Flood-scoured	Erosion	ns
MAD12	14GE1156	Prehistoric	Lithic scatter (retouch, debitage)	Flood-scoured	Erosion	ns
MAD13	14GE1157	Prehistoric	Lithic scatter (retouch, debitage)	Flood-scoured, tank road	Erosion	ns
MAD14	14GE1165	Prehistoric	Isolated retouched flake	Dirt road	Traffic, erosion	ns
MAD15	14GE1172	EuroAmerican	Concrete foundations, rubble	Exposed	Vegetation	ns

Table of Sites, Site Condition and Recommendations, cont.

MAD16	14GE4	Plains Woodland/ Plains Village	Berry Mounds	Exposed	Collectors	Further NR Testing
MAD17	14GE1158	Prehistoric	Lithic scatter (debitage, retouch)	Dirt road	Traffic, erosion	ns
MAD18	14GE1159	Prehistoric	Lithic scatter (debitage)	Flood-scoured	Cultivation	ns
MAD19	14GE1168	EuroAmerican	Concrete foundations, limestone wall & rubble	Exposed	Flooding	ns
MAD20	14GE1160	Prehistoric	Isolated find (knife)	Flood-scoured	Erosion	ns
MAD21	14GE1161	Prehistoric	Lithic concentration (retouch, debitage)	Flood-scoured	Erosion	ns
MAD23	14GE1162	Prehistoric	Lithic scatter (point midsection, retouch, debitage)	Dirt road	Traffic, erosion	ns
MAD24	14GE1163	Prehistoric	Lithic scatter (scraper/ spokeshaves, retouch, debitage)	Flood-scoured	Erosion	ns
MAD25	14RY2154	EuroAmerican	Limestone foundations & well, wall, concrete pad, molded brick	Exposed	Overgrowth, tank activity	ns
MAD26	14RY2155	EuroAmerican	Stone wall, cement cellar & foundation	Exposed	Vegetation	ns
MAD27	14RY2156	EuroAmerican	Limestone foundation, concrete wall, floor, pad, rubble	Exposed	Army activity	ns
MAD28	14RY2153	Prehistoric	Retouch, debitage	Flood-scoured, plowed	Cultivation	ns
MAD29	14RY2157	EuroAmerican	Limestone wall with circular enclosures	Exposed	Weathering	ns
MAD30	14RY2158	EuroAmerican	Dump	Exposed	Vegetation	ns

Table of Sites, Site Condition and Recommendations, cont.

MAD31	14RY2159	EuroAmerican	6 limestone or concrete foundations, limestone well	Exposed	Vegetation	ns
MAD34	14GE1164	Prehistoric	Lithic scatter (debitage)	Heavily silted	Vegetation	Further NR Testing
MAD35	14GE1174	EuroAmerican	4 Concrete & limestone foundations, limestone well, wall, rubble	Exposed	Vegetation, flooding	ns
MAD36	14GE1175	EuroAmerican	7 Limestone & concrete foundations, windmill base	Exposed	Vegetation, public use	ns
MAD37	14RY2161	EuroAmerican	5 limestone & cement foundations, limestone well, buried gas meter, concrete fence posts	Exposed	Vegetation, public use	ns
MAD38	14GE51	Archaic	Flakes observed	Plowed	Vegetation, public use	ns
MAD39	14GE1169	Prehistoric	Large lithic scatter (triangular point, bifaces, retouch, spokeshave/ scrapers, graver, cores,debitage)	Plowed, road-damaged	Traffic, flooding	Further NR testing
MAD40	14GE1170	Prehistoric	Lithic scatter (debitage)	Eroded shoreline	Erosion	ns
MAD41	14GE1171	Prehistoric	Lithic scatter (biface midsection,debitage)	Eroded shoreline	Erosion, public use	ns
MAD42	14GE29	Prehistoric	Lithic scatter (knife)debitage observed	Plowed, terraced, road-damaged, flood-scoured	Erosion, public use, cultivation	Further NR testing
MAD43	14GE1176	EuroAmerican	Fieldstone foundation, concrete steps, limestone rubble	Exposed	Vegetation, public use	ns

MAD44	14GE1177	EuroAmerican	Limestone & cement foundations, intact concrete root cellar	Exposed	Vegetation, public use	ns

Table 1: List of sites identified by the survey, their condition and significance.

### Culture history results

The survey results show that prehistoric and historic occupation sites are scattered throughout the survey area. Most of the prehistoric sites are lithic scatters of various sizes, focused on creek banks, terraces and the upland margins around sources of water. As surveyors found very few diagnostic projectile points, and only one piece of pottery, it has not been possible to add significantly to the culture history sequence for the area. Two late Archaic to early Woodland occupations (14GE42, 14CY25) and three Plains Village occupations (14GE1130, 14GE1135, 14GE1150) have been tentatively identified by diagnostics out of the 51 prehistoric sites recorded. In making these determinations, USDAL does not interpret lithic sites without pottery as preceramic sites (i.e. Archaic).

### Future research questions

In a preliminary cultural resources management plan for Milford Lake (O'Brien 1978), O'Brien gave high priority to the survey of flood pool zones around the reservoir, lands leased to Fort Riley, and land used for active agriculture (O'Brien 1978:25). She especially identified the threat of wave damage along shorelines. Her fears were justified, as the floods of 1993 caused significant damage, scouring the surface of former agricultural land, already long-damaged by plowing, to the limestone bedrock, eating away at the soft banks on the eastern and western reaches of the lake, and flooding tributary lowlands with deep silt and debris. High-water wave damage has been particularly severe along the east-facing shoreline of the Smoky Hill area, where more than 10 meters of shoreline have been removed by the waves and, it appears, several archaeological sites. Here too, the waves have created new bays in the shoreline. O'Brien was also concerned about the impact of heavy military vehicles in Fort Riley. Within the military reservation, surveyors observed many tank tracks, foxholes, and tank placements, often in proximity to archaeological sites, including burial mounds.

Schmits' (1988) concerns in his 1982-84 survey of Milford Lake lands, reflecting changing archaeological theory, were oriented towards subsistence and settlement analysis and the development of systematic techniques for predicting the location of sites. He proposed that each creek drainage be studied separately, with theoretical concerns for the locational decisions made by hunter-gatherers for different site functions during different seasons and practical concerns for management priorities (Schmits 1988:343).

Schmits (1988:332-34) studied the relation between terrain and settlement, dividing his survey area into three general topographical zones - lowlands, terraces and uplands - and calculating the frequency of sites for each square mile of survey area. He then presented this data (Table 2) - eight new sites and four previously recorded - and made a number of predictions about the distribution of archaeological sites. On the basis of this very small data set, bolstered by information from previous surveys in the area, he made several predictions for future surveys. Some of these could not be tested during the 1993 project because of the limitations of the survey (e.g. lack of terrace and accessible

floodplain areas on the Republican River); the following predictions, however, are relevant to this analysis:

- i. prehistoric sites will be located mainly on the uplands, with smaller numbers on terraces ("Overall, the prehistoric components should be predominantly located in upland locations with a smaller number of sites situated on T-1 terraces") (Schmits 1988:333)
- ii. the uplands of the tributaries will contain a much higher frequency of sites than the uplands of the Republican River mainstem ("the uplands here [i.e. in the tributaries] should contain a much higher frequency of sites, based on the locations of previously recorded sites") (Schmits 1988:333)
- iii. Historic sites will be situated mainly in the uplands ("Historic EuroAmerican sites should occur predominantly in the uplands") (Schmits 1988:333).

The 1993 survey provided a good opportunity to test these predictions, as the survey covered the range of terrains used in the model (defined, as in Schmits' analysis, according to the soils at the site). For one comparison, between sites on the Republican River and tributaries, it was necessary to assign some sites to one or the other category because it was not clear whether they were associated with the Republican River or the tributary. Sites at the mouth of tributaries were assigned to the tributaries. Sites facing the Republican River valley but in proximity to modern stream channels draining across the floodplain were assigned to the Republican (e.g. the sites on the east-facing headland of the Smoky Hill survey section). Such an attribution was necessary because it is not known whether the creeks or the main river occupied the lowlands adjacent to the sites in the prehistoric past.

Tables 2 to 4 present the results of the 1993 survey and compare them to Schmits' (1988) results.

	No. of Acres Surveyed	No. of Sites	Site Density (sites per acre)	Site Density (sites per section)
<i>USDAL Survey:</i>				
Uplands	4668	41	0.009	5.62
Terrace	349	6	0.017	11.00
Lowlands	544	4	0.007	4.70
<i>Schmits Survey:</i>				
Uplands	1805	2	0.001	0.71
Terrace	1220	10	0.008	5.25
Lowlands	1790	2	0.001	0.72

Table 2: Distribution of prehistoric sites and surveyed area by topographic zone, for USDAL and Schmits surveys.

	No. of Acres Surveyed	No. of Sites	Site Density (sites per acre)	Site Density (sites per section)
Republican River Uplands	1904	16	0.008	5.38
Tributary Rivers Uplands	2764	25	0.009	5.79

Table 3: Distribution of prehistoric sites and survey area by drainage type (mainstem versus tributaries) in uplands, for USDAL survey.

A comparison of the figures for the 1993 survey (Tables 2 and 3) indicates that the expected site/terrain frequencies did not materialize. The density of uplands sites determined by the 1993 survey was greater than the density calculated by Schmits in 1982 and 1984, as Schmits predicted, but the terrace remained the most intensively occupied zone in the total area covered by each survey (Table 2). In contrast to Schmits' prediction that site density in uplands along tributaries would be superior to the uplands of the Republican River valley, based on the locations of previously recorded sites (Schmits 1988:332), the site density calculated from the USDAL survey on uplands associated with the Republican mainstem and uplands associated with the tributaries was virtually the same (Table 3). Finally, the 1993 survey results show that the density of historic sites in terrace locations is greater than the density of historic sites on uplands (Table 4).

	No. of Acres Surveyed	No. of Sites	Site Density (sites per acre)	Site Density (sites per section)
Uplands	4668	25	0.005	3.43
Terrace	349	5	0.014	9.17
Lowlands	544	2	0.004	2.35

Table 4: Distribution of historic sites and site density by topographic zone, according to USDAL survey.

The results seem to reveal two distinctive features about the occupation patterns of the prehistoric and historic inhabitants of the area: they preferred the terrace over other terrain and did not show a preference for the uplands of the tributaries surveyed over the mainstem of the Republican River.

Although Schmits' generalized model rather modestly deals with the problem of site placement on lowlands, terraces and uplands, the contradictory results in 1993 are no doubt due to a combination of factors associated with the survey conditions and the actions of past inhabitants of the area - in other words, with the complexities of human behavior in the environment in general.

He proposed that each creek drainage be studied separately, with concerns for the locational decisions made by hunter-gatherers for different site functions during different seasons (Schmits 1988:342). Unfortunately, circumstances dictated that much of the survey was property-oriented. In addition, a significant proportion of lands in the survey area was not under cultivation and therefore had, in Schmits' terms, inadequate ground surface visibility (Schmits 1988:343) - especially the uplands, thick with prairie grass and very difficult to survey. The flooding of 1993 also left the lowlands partly inundated, sodden and with a new deposit of mud. The model did not take into account such relative

differences in visibility of the ground surface (e.g. comparing the tallgrass prairie uplands with partially eroded slopes and river bottoms obscured by siltation). Shovel testing may be adequate for the identification of very dense sites, such as middens or quarries, but when the density of a site is much less than one object per square meter, as it was in most of the sites discovered at Milford Lake, the location of cultural material by this method is entirely fortuitous.

The solution to the problem of finding sites that may be buried under deep soil deposits is not simple. Geomorphological data and field survey may be put to good use in archaeology, as outlined by Bettis (1993) and Mandel & Bettis (1993), with significant implications for archaeological survey and its role in developing predictive models of site locations and management. Both authors consider age and depth of deposits and their ramifications for field survey results. Essentially, they show that shallow subsurface testing and/or intensive pedestrian survey are a poor use of resources where there are late, overlying deposits like the Camp Creek member of the DeForest formation identified in the Milford Lake area and that deep coring is preferable. This is especially a problem in lowland environments and may account for the fact that the site density in the lowlands is lower than that of the uplands around Milford Lake and its tributary creeks.

Results of geomorphological work on terraces in Kansas may not be consistent with results in other areas. Recent research in the Floyd River valley of northwestern Iowa suggests that the application of geomorphological modeling is still very tentative. Although it was initially predicted that the area had a significant potential for buried sites, an extensive geomorphological survey, using deep coring and backhoe trenching, found no buried soils - indicating that the actual land formation processes were different than predicted from experience in other parts of Iowa (Rolfe Mandel, pers. comm.).

The fundamental problem with Schmits' approach, however, is not related to visibility or other factors that may affect the finding of sites. A simple differentiation of elevation is not sufficient to model the complex factors that undoubtedly go into the selection of a particular place for human activity. Such decisions will be based on assessments related to the nature of the task, previous training and experience, social and cultural propensities, scheduling, cost, and a myriad of other social and material circumstances associated with daily life. Even to begin an analysis of such settlement models requires abundant chronological and spatial data. Unfortunately, abstracting human behavior patterns from a site-based survey is difficult in landscapes that have been lived in over thousands of years. It is possible that a single occupation may be preserved through rapid burial by, for example, colluvial or alluvial deposits. Unfortunately, the norm in agricultural zones such as Milford Lake is generally the opposite: sites are continuously exposed, degraded through plowing, erosion and other natural and cultural disturbance. Without site integrity, it is impossible to determine the range, sequence or time depth of the occupations that make up a site.

What is possible, however, is a site-based analysis that looks at activity patterns in the landscape without reference to chronology or site function, guided by the premise that some parts of the material landscape may be more appropriate for *human* activity than other parts (see, for example, Archer, Zimmerman & Tieszen 1982; Molyneaux 1983; Kvamme 1992). Applying this to problems of subsistence and settlement of the kind that Schmits (1988) proposes requires, at the very least, a set of variables associated with the physical character of the actual ground surface within each geomorphological zone, as this will affect the suitability of a site for occupation. Kvamme (1992:25) has articulated the notion of selectivity in the material environment in his concept of activity space. By focusing on place, Kvamme avoids the kinds of problems associated with interpreting sites according to function, which rely mainly on interpretations of artifact inventories:



although different functional classes of activities might occupy different kinds of contexts within the activity space, this concept is useful...because the ultimate goal is to provide a mapping of those locations...where prehistoric open-air activity of any kind was placed.

Environmental simulations such as Kvamme's (1992:25) take advantage of the vastly superior technologies available for handling complex data sets. He employs what may be described as basic environmental variables that would be ideal for any future analysis of the cumulative data of all the years of survey at Milford: slope, aspect [direction of exposure], local relief, view data [what can be seen from the site], shelter index [the amount of shelter], and distances to water sources (Kvamme 1992:25-7).

With such a model, developed within a GIS program, it may be possible to move closer to Schmits' intended goal, a knowledge of the patterns of human occupation in the Milford Lake area that will enable managers to more clearly anticipate the archaeological resource potential of a specific place - and at the same time achieve an integration of management and research that benefits the whole community.

## GLOSSARY

**Alluvium:** river valley sediments (gravel, sands, silts and clays) which precipitate, often burying archaeological sites and forming a stratified succession of new surfaces or *terraces*.

**Bulb of Percussion:** refers to a physical attribute of a flake--a byproduct of *conchoidal fracturing* of rock during flintknapping. The bulb of percussion is a swelling on the fractured (internal) face of the flake next to the striking platform where the flake was struck off the parent rock (core).

**Colluvium:** sediments that accumulate at the base of slopes, such as the sides of valleys, as a result of downslope wash.

**Component:** refers to a single episode, event or occupation by people during which archaeological materials at a site were left.

**Conchoidal Fracturing:** distinctive fracturing that occurs when glassy rock (including flint and chert) is struck. Fracturing begins at the point of impact (striking platform) and forms a break that resembles the surface of a cone on the material being separated (flake), and the impression of a cone on the parent material (core).

**Curation:** conservation of material (usually tools) for reuse; behavior that results in tools being saved and reused, including: preparation of tools (ahead of use); transportation of tools from site to site where they are used; and multiple application of tools (to different tasks).

**Decortication:** a goal or byproduct of flintknapping: removal of the outer surface or cortex of rock. A flintknapper often aims to remove the cortex of a rock early in the process of bifacial knapping.

**Distal:** in lithic or stone tool analysis, the distal end of a flake is the end opposite the striking platform and *bulb of percussion*. The distal end of a projectile point or preform is the tip or intended working end, opposite the hafted basal or proximal end.

**Dorsal:** in lithic analysis, the dorsal side of a flake is the outer side, a remnant of the surface of the parent material. The inner side of the flake lies along the surface *conchoidally fractured* by the blow which removed the flake from the parent material.

**Extractive camp:** a temporary camp where people live away from larger villages or base camps while exploiting resources from the nearby environment (see *resource extraction*).

**GIS (Geographic Information System):** a computer-assisted system for the collection, storage, analysis and display of geographic data, including archaeological data.

**Holocene:** current epoch of geological time spanning the last 10,000 years, since the retreat of the last continental ice sheets in North America and Europe at the end of the *Pleistocene* epoch (see below). In North America, all known human history has occurred during the Holocene except the early Paleo-Indian period between about 12,500 and 10,000 years before present.

**Lithics:** stone tools and byproducts (debitage) of flintknapping (stone tool manufacturing).

**Macroscopic:** pertaining to evidence that can be seen or analysis done with the naked eye (e.g., seed types that can be distinguished without the use of the microscope).

**Morphology:** shape; physical form.

**Pleistocene:** epoch of geological time from about two million years ago to 10,000 years ago, coinciding with a series of major advances of ice sheets over the continents of Europe and North America and also with the evolution of human beings. Current archaeological evidence suggests that man entered North America from Asia via Alaska at the end of this epoch (see also *Holocene*).

**Protohistoric:** period in the history of a people before their use of written records but after contact has been established with literate peoples.

**Radiocarbon analysis:** dating of time of death of organic material (wood, charcoal, bone, shell, etc.) through measurement of the ratio of unstable (radioactive) carbon to stable carbon in the dead material. This method is accurate up to about 50,000 years ago, though precision of age estimates in terms of years (indicated by plus or minus values) varies with precision of measurement. Age estimates can be expressed in terms of years 'before present' (B.P.), meaning, conventionally, before 1950.

**Resource procurement:** refers to the process of acquisition of resources by people (food, water, raw materials and other essentials) and the cultural organization of this pursuit.

**Rill:** small channel at the upper end of a drainage system.

**Riparian:** pertaining to river edge environments (e.g., species of plants that live in marshes and near river banks used as resources by people).

**Sedentism:** property (of societies or cultures) of being settled, in contrast to wandering, migratory, nomadic or transhumant.

**Silicified:** geological term that refers to rocks that have metamorphosed into a glass-like or micro-crystalline state. These rocks, when struck, produce *conchoidal fracturing* and can thus be successfully knapped.

**Subsistence:** process of obtaining food; the cultural organization of food-getting activities.

**Taphonomy:** the study of the process of decay.

**Terrace:** former floodplain of a river composed of river sediments (*alluvium*).

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## APPENDIX 1

Tables showing land ownership for historic sites found during Milford Survey in 1993

**Table A1. Property Ownership Transfer at Site 14GE1132**

Date	From	To	Deed
3-8-1904	State of Kansas	P. H. Bower	Patent
10-8-1919	Florence J. Bower	J. C. Weaver	WD
10-8-1919	J. C. Weaver & wf	Charles Karman	WD
3-1-1924	Kate Karmann (admin)	Charles Schweitzer	Admin D
5-3-1963	Herman R. Schweitzer, et al	USA	WD

**Table A2. Property Ownership Transfer at Site 14GE1134**

Date	From	To	Deed
11-16-1882	U.P. Railway	Orrin S. Russell	WD
11-15-1883	Orrin Russell	August Roediger	WD
3-1-1893	Sheriff, Geary Co.	Charles Humble	Sheriff D
9-27-1893	Charles Humble	Farmland Mtg & D Co.	Q/C
10-15-1894	Farmland Mtg & D Co	Agricultural Land Co	WD
3-7-1898	Agricultural Land Co	Jno Schweizer & wf	WD
12-12-1900	Jno Schweizer & wf	Fred Schweizer	WD
3-8-1917	Rosina Schweitzer (widow)	C.C. Schweitzer	WD
1-22-1934	Geo Schweitzer, et al	Lizzie Schweitzer	WD
5-4-1946	Lizzie Schweitzer	Geo Schweitzer	WD
1962 & 64	Geo Schweitzer & wf	USA	WD

**Table A3. Property Ownership Transfer at Site 14CY106**

Date	From	To	Deed
10-20-1871	US	George Gilbert	Pat
4-5-1886	Geo & Ellen Gilbert	Elizabeth J. Chapman	WD
5-11-1886	Eliz Chapman & Hus, Alex.	A. W. Kent	WD
3-4-1903	A.W. Kent & wf	George A. Kent	WD
12-32-1903	George Kent	Fred V. Johnson	WD
1-26-1905	Fred & Alice Johnson	E. L. Lindner	WD
9-1-1905	E.L. Lindner & wf	Henry A. Hoch	WD
2-3-1923	Henry A. Hoch & wf, Lillian	R. B. Hammerli	WD
4-10-1926	R.B. Hammerli to wife	Alice Biehl Hammerli	WD ½ int
8-14-1936	R.B. Hammerli & wf, Alice	Fred Fox	WD
12-17-1952	Anna Fox, widow to daughter	Laura D. Beichter & hus	WD ½ int
1-3-1953	Anna Fox, widow	Laura & Oscar Beichter	WD ½ int
5-24-65	Oscar Beichter & wf	USA	WD

**Table A4. Property Ownership Transfer at Site 14CY112**

<b>Date</b>	<b>From</b>	<b>To</b>	<b>Deed</b>
9-3-1860	US	Lorenzo Gates	Pat
3-19-1896	Lorenzo Gates	Mrs. Lucinda Gill Gates	Probate
9-8-1896	Mrs. Lorenzo Gates	Laura Gates, et al	WD
1-14-1898	Laura Gates, et al	Marcus & Martha Gates Bradbury	WD
12-8-1906	Marcus Bradbury & wf	William Bradbury	WD
5-13-1931	William Bradbury to sons	Clarence & Joseph Bradbury	Probate
3-9-1935	Nettie Bradbury, widow	John L. Dunham	WD
4-29-1940	John L. Dunham & wf	Orville F. Hughes & wf, Rachel	WD
3-11-1965	Orville F. Hughes	USA	WD

**Table A5. Property Ownership Transfer at Site 14CY113**

<b>Date</b>	<b>From</b>	<b>To</b>	<b>Deed</b>
12-21-1878	US	K.P. Rwy	Pat.
10-12-1883	K.P. Rwy	Horace L. Small	WD
4-2-1884	Horace L. Small & wf	Porter Sargent	WD
11-4-1891	Porter Sargent & wf	Thomas D. Birden	WD
8-20-1894	Thomas D. Birden & wf	August F. Knauer	WD
1-21-1903	August F. Knauer & wf	Ulrich Hertig & wf	WD
1-3-1905	Ulrich Hertig & wf	Richard H. Lister	WD
2-1915	Richard H. Lister & wf	Robert Younken & wf, Mable L.	WD
11-14-1916	Robert Younken & wf	Jacob Nelson	WD
5-15-1923	Jacob Nelson, widower	William Bradbury	WD
5-13-1931	William Bradbury to sons	Clarence & Joseph Bradbury	Probate
3-9-1935	Nettie Bradbury, widow	John L. Dunham	WD
4-29-1940	John L. Dunham & wf	Orville F. Hughes & wf, Rachel D.	WD
9-131-1968	C. Chaffee & F. Knapp	Orville Hughes, father from daughters	WD
7-11-1978	Orville F. Hughes	Gary & Carolyn Chaffee	WD
	Gary & Carolyn Chaffee	USA	WD

**Table A6. Property Ownership Transfer at Site 14CY114**

<b>Date</b>	<b>From</b>	<b>To</b>	<b>Deed</b>
5-10-1861	US	John Butler	Pat.
6-9-1883	John Butler, widower	Joseph Bradbury & wf, Rhoda	WD
2-20-1884	Joseph Bradbury & wf	John M. Younkin & wf Emma J.	WD
3-3-1916	John Younkin & wf	C. J. Page	WD
11-6-1917	C. J. Page & wf, Pearl	R. Wesley Mack & wf, Mable	WD
2-28-1919	R. Wesley Mack & wf	F.W. Frauenfelder	WD
2-26-1944	F.W. Frauenfelder & wf	Mable & Edna Dunham, sisters	WD
9-13-1955	Mable & Edna Dunham	Orville Hughes & wf, Rachel D.	WD 1/3 int
1-15-1965	Dunham sisters & O. Hughes	USA	WD

**Table A7. Property Ownership Transfer at Site 14CY115**

Date	From	To	Deed
2-17-1879	State of Kansas	Lorenzo Gates	Patent
6-4-1888	Canis B. Williams	Lucinda Gates	QC
11-23-1894	State of Kansas	heirs of Lorenzo Gates	Patent
4-17-1899	heirs of Lorenzo Gates	Lucinda Gates, widow	QC
8-30-1919	Geo. A. Woodbury	Grant Gates (in probate)	Admin D
11-13-1942	Grant Gaates & wf	I.H. Williams & wf, Lucy & Lucy L. Hammond (single)	WD
4-26-1955	I.H. Williams (sgl)	Lucy Hammond Muston	WD 1/6 int
2-13-1965	Lucy Muston & hus, John & Ide Williams (widower) & Mary JoAnne Williams, daughter	USA	WD

**Table A8. Property Ownership Transfer at Site 14CY116**

Date	From	To	Deed
1-4-1879	State of Kansas	Duncan McBeth	Patent
11-15-1898	Duncan McBeth & wf	Marquis Potter	WD
3-23-1918	Marquis Potter & wf	J. E. Erickson	WD
1-7-1952	John Erickson & wf, Beda	Virgil L. Peterson & wf	WD
4-25-1963	Virgil Peterson	Orville Hughes	WD
3-11-1965	Orville Hughes	USA	WD

**Table A9. Property Ownership Transfer at Site 14GE1141 and Site 14GE1142**

Date	From	To	Deed
6-21-1886	State of Kansas	Jonathan Roether	Patent
3-4-1897	D.D. Denver (adm)	John Luthi	WD
12-31-1963	Frank Luthi, et al	USA	WD

**Table A 10. Property Ownership Transfer at Site 14GE1143**

Date	From	To	Deed
12-13-1918	US	DeWitt C. Morris	Patent rec'd
5-13-1865	DeWitt Clinton Morris	Daniel Branscom	WD
7-26-1870	Daniel Branscom & wf	Jeremiah Younkens	WD
11-7-1918	Jeremiah Younkin, et al	Sylvia Sanders & hus, Isaac	WD
6-21-1944	Lettie Heer, et al	Linda Mellinger & hus	WD
9-10-1963	Linda Mellinger & hus	USA	WD

**Table A 11. Property Ownership Transfer at Site 14GE1149**

Date	From	To	Deed
8-16-1879	US	Harman Clark	Patent rec'd
2-28-1860	Harmon Clarke	Richard Byrnes	WD
3-19-1860	R. Byrnes & wf	Patrick Garaghty	WD
4-18-1879	Patrick Geraghty	John Meyers	WD
7-21-1880	John Meyers & wf	Peter Meyers	WD
9-27-1882	Peter Meyers	James Andrews	WD
3-4-1901	J. D. Andrews & wf	Daniel G. Younken	WD
5-1-1953	Mabel Dibben, et al	E. G. Livengood	WD
6-26-1963	Ellsworth G. Livengood & wf	USA	WD

**Table A12. Property Ownership Transfer at Site 14GE1151**

<b>Date</b>	<b>From</b>	<b>To</b>	<b>Deed</b>
8-16-1879	US	John Meyers	Patent
2-22-1884	John Meyers & wf	Henry Swarmer	WD
5-14-1885	Henry S. Swarmer	John Faidley	WD
3-1-1901	John Faidley & wf	Charles Faidley	WD
2-8-1902	Chas Faidley & Wf	Wm Fasse	WD
9-4-1915	William Fasse, widower	Florence H. Fasse	WD
1-12-1960	Hulda Enfield & hus	Lee Keener & wf	WD
5-14-1963	Florence Fasse, et al	Dan H. Meyers, Sr.	Affidavit
5-14-1963	Lee Keener	USA	WD

**Table A13. Property Ownership Transfer at Site 14GE1152**

<b>Date</b>	<b>From</b>	<b>To</b>	<b>Deed</b>
9-19-1917	US	John Shandy	Patent rec'd
1-18-1869	John Shandy	A. E. Corey	WD
11-22-1870	Alex E. Corey & wf	John Hill	WD
3-9-1881	John Hill & wf	Davis & Faidley	WD
3-9-1881	Faidley & Davis	James Andrews, et al	WD
3-4-1901	J. D. Andrews & wf	Daniel G. Younkin	WD
5-1-1953	Mabel Dibben, et al	E. G. Livengood	WD
6-26-1963	Ellsworth G. Livengood & wf	USA	WD

**Table A14. Property Ownership Transfer at Site 14GE1167**

<b>Date</b>	<b>From</b>	<b>To</b>	<b>Deed</b>
11-29-1872	USA	Andrew D. Reed	Patent
6-3-1874	A.D. Reed & heirs	Mary E. Sargent, et al	WD
6-3-1874	Mary E. Sargent, et al	Arthur F. Stewart	WD
7-7-1876	A. F. Stewart & wf	Mary E. Sargent & hus	QC
3-19-1881	David Reed	Mary Sargent, et al	WD
3-19-1881	M.E. Sargent, et al	A. J. & A. C. Streeter	WD
3-28-1881	A. C. Streeter & wf	Geo. S. Bryant	WD
2-28-1883	George Bryant & wf	Charles & Eli George	WD
2-28-1883	Eli George	Elizabeth George	WD
8-13-1883	Chas & Eli George, et al	Clarence Hill	WD
7-14-1896	C.R. Hill & wf	John K. Braden & wf	WD
2-5-1897	C.R. Hill & wf	Jno & Mary Braden	WD
1-20-1898	Clarence Hill & wf	Edward Hill	WD
5-2-1907	Edward Hill	T. Steinbruck	WD
5-11-1946	Dan Meyers (Extr.)	J.H. Gingrich	WD
	Joseph Harold Gingrich	USA	WD

**Table A15. Property Ownership Transfer at Site 14GE1172**

Date	From	To	Deed
3-26-1863	U.S.	George Taylor	Patent
9-18-1868	Geo Taylor	Mel Barry & A.W.	WD
3-18-1889	Melchior Barry & wf	John D. McDonald	WD
4-7-1894	Sheriff, Geary Co.	Melchior Barry	Sheriff D
1-19-1912	R.E. McDonald, et al	Wm M Woodbury	WD
1952	W. M. Woodbury & wf	H.B. Woodbury	QCD
1954	H.B. Woodbury	W.M. Woodbury	QCD
1-24-1963	W. M. Woodbury	USA	WD

**Table A16. Property Ownership Transfer at Site 14RY2157**

Date	From	To	Deed
10-27-1884	U. S.	U. P. Railway Co.	Patent
4-20-1880	K. P. Railway Co.	L. A. Streeter	WD
7-28-1890	A. J. Streeter	M. A. Streeter	WD
1-1-1896	Geo. A. Streeter et ux	M. A. Streeter	WD
4-30-1896	M. A. Streeter, et al	B. F. Shaner	WD
3-20-1958	B. F. Shaner et ux	Maud Shaner Hanna et al	WD
1-20-1960	Samuel F. Shaner et ux	Maud Shaner Hanna et vir	WD
2-1-1965	Maud Shaner Hanna et vir	USA	notice

**Table A17. Property Ownership Transfer at Site 14GE1174**

Date	From	To	Deed
6-6-1862	US	John M. Breden	Patent
6-6-1862	John Breden & wf	B. E. Fullington	WD
3-25-1905	Nessley Younken & wf	James W. Frazier	WD
3-12-1908	J. W. Frazier & wf	Peter Senti	WD
3-29-1912	Peter Senti & wf	Chas Schwartz	WD
3-29-1912	Chas Schwartz & wf	J. F. Rudolph	WD
11-29-1963	Emma Rudolph, et al	U. S. A.	WD

**Table A18. Property Ownership Transfer at Site 14GE1175**

Date	From	To	Deed
6-6-1862	US	John M. Breden	Patent
6-6-1862	John M. Breden & wf	B. E. Fullington	WD
6-19-1886	B. E. Fullerton & wf	I. N. Kneeland	WD
3-13-1909	I. N. Kneeland & wf	J. E. Rudolph	WD
3-29-1912	Peter Senti & wf	Chas Schwartz	WD
3-29-1912	Chas Schwartz & wf	J. E. Rudolph	WD
11-29-1963	Emma Rudolph, et al	U. S. A.	WD

**Table A19. Property Ownership Transfer at Site 14GE1133**

<b>Date</b>	<b>From</b>	<b>To</b>	<b>Deed</b>
1873	US	Jeff Forkner	Patent
1873	Jeff Forkner	I. H. Keller	WD
1877	I. H. Keller	August Roediger	WD
1879	August Roediger	Jacob Keller & John James	WD
1891	Jacob Keller & John James	John James	WD
1907	John James	Harry James, Annie Floyd, Florence Dirnfield, et al	WD
1907	Annie Floyd, et al	James Arkell	WD
1912	James Arkell	Jud Wilson & Geo. Steppe	WD
1934	George Steppe	William Steppe	WD
1944	William Steppe	Nick Schlitz	WD
1962	Nick Schlitz	U.S.A.	WD

**Table A20. Property Ownership Transfer at Site 14GE1176**

<b>Date</b>	<b>From</b>	<b>To</b>	<b>Deed</b>
8-6-1881	U.S.	Henry A. Myers	Patent
12-18-1886	Henry A. Meyers, dec.	Uriah Myers & Margaret Myers	Probate
2-8-1890	Sheriff's deed	Uriah Myers	Sheriff's
9-14-1905	Margaret Waller, et al	W. H. Myers	Quit Claim
5-24-1963	Nell Bergen	U.S.A.	WD

## APPENDIX 2

Table 1 ordered by site number.

Site Number	Field Number	Cultural affiliation	Content	Condition	Expected impacts	Significance and recommendations (ns = not significant, no further work recommended)
14CY25	MC1	Plains Woodland/ Archaic	Lithic concentration (core, retouched flake, debitage)	Silted		ns
14CY42	MC2	Plains Woodland/ Archaic	Core, debitage	Silted		ns
14CY46	RB5	Prehistoric	Lithic scatter (core, debitage)	Plowed	Cultivation	Further NR Testing
14CY47	RB6	Prehistoric	lithic scatter (graver, spokeshave, debitage)	Plowed	Erosion, cultivation	ns
14CY57	MC10	Prehistoric	Lithic scatter (retouch. flake, debitage)	Flood-scoured, silted	Cultivation, erosion	ns
14CY105	RB1	Prehistoric	Large lithic scatter (core, scrapers, unifacial & bifacial tools, spokeshave, debitage)	Plowed, severe erosion	Cultivation	Further NR Testing
14CY106	RB3	EuroAmerican	Farm foundations & debris	Exposed	Re-growth, hunters	Further NR Testing
14CY107	RB7	Prehistoric	Isolated find (unifacial knife)	Plowed	Cultivation	ns
14CY108	RB8	Prehistoric	Lithic scatter (biface tip, retouched flake, debitage)	Plowed	Cultivation	ns
14CY109	RB9	Prehistoric	Lithic scatter (core, scraper, retouched flake, debitage)	Plowed	Cultivation	ns
14CY110	MC3	Prehistoric	Debitage	Silted, flood-scoured		ns
14CY111	MC4	Prehistoric	Lithic scatter (core, debitage)	Silted, flood-scoured	Erosion	ns
14CY112	MC5	EuroAmerican	Farm foundations (cement & limestone)	Flood-scoured, exposed	Overgrowth	ns
14CY113	MC6	EuroAmerican	Limestone & cement buildings, foundations	Exposed	Overgrowth	Further NR Testing



Table of Sites, Site Condition and Recommendations, cont.

14CY114	MC7	EuroAmerican	Limestone well & wall	Exposed	Overgrowth	ns
14CY115	MC8	EuroAmerican	Lime kiln (glassy)	Flood-damage	Weathering	ns
14CY116	MC9	EuroAmerican	Lime kiln	Flood-damage	Weathering	ns
14CY117	TC2	Prehistoric	Lithic scatter (retouch. flake, debitage)	Plowed	Cultivation, army activity	ns
14GE4	MAD16	Plains Woodland/ Plains Village	Berry Mounds	Exposed	Collectors	Further NR Testing
14GE29	MAD42	Prehistoric	Lithic scatter (knife) debitage observed	Plowed, terraced, road-damaged, flood-scoured	Erosion, public use, cultivation	Further NR Testing
14GE42	SH11	Archaic	Isolated find (tertiary flake)	Flood-scoured, severe bank erosion	Lake erosion	ns
14GE45	SH9	Prehistoric	Isolated find (retouched flake)	Severe bank erosion	Bank erosion	ns
14GE51	MAD38	Archaic	Flakes observed	Plowed	Vegetation, public use	ns
14GE131	SH10	Plains Woodland	Lithic scatter (2 bifaces, scraper, debitage)	Severe bank erosion	Bank erosion	ns
14GE1130	SH1	Late Plains Village	Lithic scatter (Washita point, preform)	Flood-scoured, road-damaged	Traffic & erosion	Further NR Testing
14GE1131	SH6	Prehistoric	Lithic scatter (core, debitage)	Flood-scoured	Lake erosion	ns
14GE1132	SH2	EuroAmerican	Semi-circular foundation, farm debris	Flood-scoured	Traffic & erosion	ns
14GE1133	SH7	EuroAmerican	Farm dump (ceramic, glass, metal)	Exposed	Erosion	ns
14GE1134	SH4	EuroAmerican	5 boulders with petroglyphs	Weathered	Weather, graffiti	Further NR Testing
14GE1135	SH12	Plains Village	Lithic scatter (Haskell point, scraper, debitage)	Flood-scoured	Erosion	ns
14GE1136	FC1	Prehistoric	Lithic scatter (core, bifaces, scraper, spokeshave, debitage)	Flood-scoured	Cultivation, erosion, flooding	ns
14GE1137	FC2	Prehistoric	Lithic scatter (core, retouch. flakes, debitage)	Flood-scoured	Cultivation, erosion	ns

Table of Sites, Site Condition and Recommendations, cont.

14GE1138	FC3	Prehistoric	Lithic scatter (bone, scrapers, debitage)	Flood-scoured	Cultivation, erosion	ns
14GE1139	FC4	Prehistoric	Lithic scatter (debitage)	Plowed	Cultivation	ns
14GE1140	FC5	Prehistoric	Lithic scatter (retouch, debitage)	Plowed	Erosion, army activity	ns
14GE1141	FC6	EuroAmerican	Limestone, cement foundations, walls, well, bridge	Flood-damaged	Tank traffic, erosion	ns
14GE1142	FC7	EuroAmerican	Drystone foundation	Exposed	Tank traffic	ns
14GE1143	FC8	EuroAmerican	Limestone/mortar foundations, well, cellar	Exposed	Army activity	ns
14GE1144	FC9	Prehistoric	Large lithic scatter (blades, bifaces, core, scrapers, retouch, debitage)	Flood-scoured	Cultivation, severe erosion	Further NR Testing
14GE1145	FC10	Prehistoric	Isolated find (tertiary flake)	Plowed	Cultivation, tanks	ns
14GE1146	FC11	Prehistoric	Isolated find (tertiary flake)	Plowed	Cultivation	ns
14GE1147	MAD1	Prehistoric	Lithic scatter (retouch, debitage)	Eroded shoreline	Bank erosion	ns
14GE1148	MAD2	Late Archaic/ early Woodland	Lange point, biface midsection	Eroded shoreline	Bank erosion	ns
14GE1149	MAD3	EuroAmerican	Brick/concrete trench foundation	Exposed	Erosion	ns
14GE1150	MAD4	Late Plains Village	Pottery body sherd, retouch, debitage	Eroded shoreline	Beach erosion	ns
14GE1151	MAD5	EuroAmerican	Dry limestone & cement foundations, extant brick chimney	Exposed	Overgrowth	ns
14GE1152	MAD6	EuroAmerican	Limestone cistern, foundations, well, concrete walls	Exposed	Vegetation	ns
14GE1153	MAD7	Late Archaic/ Early Woodland	Side-notched projectile point, debitage	Plowed	Cultivation	ns
14GE1154	MAD10	Prehistoric	Lithic scatter (tertiary flakes)	Eroded bank	Erosion	ns
14GE1155	MAD11	Prehistoric	Isolated find (projectile point tip)	Flood-scoured	Erosion	ns
14GE1156	MAD12	Prehistoric	Lithic scatter (retouch, debitage)	Flood-scoured	Erosion	ns

Table of Sites, Site Condition and Recommendations, cont.

14GE1157	MAD13	Prehistoric	Lithic scatter (retouch,debitage)	Flood-scoured, tank road.	Erosion	ns
14GE1158	MAD17	Prehistoric	Lithic scatter (debitage, retouch)	Dirt road	Traffic, erosion	ns
14GE1159	MAD18	Prehistoric	Lithic scatter (debitage)	Flood-scoured	Cultivation	ns
14GE1160	MAD20	Prehistoric	Isolated find (knife)	Flood-scoured	Erosion	ns
14GE1161	MAD21	Prehistoric	Lithic concentration (retouch,debitage)	Flood-scoured	Erosion	ns
14GE1162	MAD23	Prehistoric	Lithic scatter (point midsection, retouch,debitage)	Dirt road	Traffic, erosion	ns
14GE1163	MAD24	Prehistoric	Lithic scatter (scraper/spokeshave s, retouch,debitage)	Flood-scoured	Erosion	ns
14GE1164	MAD34	Prehistoric	Lithic scatter (debitage)	Heavily silted	Vegetation	Further NR Testing
14GE1165	MAD14	Prehistoric	Isolated retouched flake	Dirt road	Traffic, erosion	ns
14GE1166	MAD8	EuroAmerican	Dump	Exposed	Erosion	ns
14GE1167	MAD9	EuroAmerican	Rubble, foundation fragments, glass, square nail	Exposed	Erosion	ns
14GE1168	MAD19	EuroAmerican	Concrete foundations, limestone wall & rubble	Exposed	Flooding	ns
14GE1169	MAD39	Prehistoric	Large lithic scatter (triangular point, bifaces, retouch, spokeshave/scraper s, graver, cores,debitage)	Plowed, road-damaged	Traffic, flooding	Further NR Testing
14GE1170	MAD40	Prehistoric	Lithic scatter (debitage)	Eroded shoreline	Erosion	ns
14GE1171	MAD41	Prehistoric	Lithic scatter (biface midsection,debitage)	Eroded shoreline	Erosion, public use	ns
14GE1172	MAD15	EuroAmerican	Concrete foundations, rubble	Exposed	Vegetation	ns
14GE1173	SH8	EuroAmerican	Concrete silo base, foundation	Flood-scoured	Traffic & erosion	ns
14GE1174	MAD35	EuroAmerican	4 Concrete & limestone foundations, limestone well, wall, rubble	Exposed	Vegetation, flooding	ns

Table of Sites, Site Condition and Recommendations, cont.

14GE1175	MAD36	EuroAmerican	7 Limestone & concrete foundations, windmill base	Exposed	Vegetation, public use	ns
14GE1176	MAD43	EuroAmerican	Stone foundation, concrete steps, limestone rubble	Exposed	Vegetation, public use	ns
14GE1177	MAD44	EuroAmerican	Limestone & cement foundations, intact concrete root cellar	Exposed	Vegetation, public use	ns
14RY2150	TC1	Prehistoric	Isolated find (tertiary flake)	Tank road	Tank traffic, erosion	ns
14RY2152	TC3	Prehistoric	Isolated find (Spokeshave/knife)	Tank road	Tank traffic, erosion	ns
14RY2153	MAD28	Prehistoric	Retouch,debitage	Flood-scoured, plowed	Cultivation	ns
14RY2154	MAD25	EuroAmerican	Stone foundations & well, wall, concrete pad, molded brick	Exposed	Overgrowth, tank activity	ns
14RY2155	MAD26	EuroAmerican	Stone wall, cement cellar & foundation	Exposed	Vegetation	ns
14RY2156	MAD27	EuroAmerican	Stone foundation, concrete wall, floor, pad, rubble	Exposed	Army activity	ns
14RY2157	MAD29	EuroAmerican	Limestone wall with circular enclosures	Exposed	Weathering	ns
14RY2158	MAD30	EuroAmerican	Dump	Exposed	Vegetation	ns
14RY2159	MAD31	EuroAmerican	Stone or concrete foundations, limestone well	Exposed	Vegetation	ns
14RY2161	MAD37	EuroAmerican	Stone & cement foundations, stone well, buried gas meter, concrete fence posts	Exposed	Vegetation, public use	ns